

GROWTH OF KNOWLEDGE ON THE REPTILES OF INDIA, WITH AN INTRODUCTION TO SYSTEMATICS, TAXONOMY AND NOMENCLATURE

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The progress in our understanding of the contents of the reptile fauna of India is reviewed. The early classification of the fauna was undertaken during Vedic times, and included groupings based on form, medium occupied, sensory powers and whether wild or domesticated. The Linnean system of binomial nomenclature, adopted since 1758, is the most widely used scheme of classification, but has its limitations, chiefly in being incompatible with the principle of common descent. Phylogenetic and other classifications, based on natural groups, have led to a proliferation of studies on systematics, from the traditional studies of morphology and anatomy, to the use of more modern molecular techniques. Aspects of systematics, taxonomy and nomenclature are discussed for non-systematists. The last stocktaking of the reptile fauna of India, in the three volume Fauna of British India series by Malcolm Smith is compared with the fauna now known from the country. A general conclusion reached is that there is much to be learnt of the country's highly diverse and endemic reptile fauna, but efforts need to be accelerated in the face of loss of habitats as a result of deforestation and of systematic expertise itself, with cuts in research funding and realignment of policies on basic research.

INTRODUCTION

"Cross-cultural evidence indicates that people everywhere spontaneously organize living kinds into rigidly ranked taxonomic types despite wide morphological variation among those exemplars presumed to have the nature of their type."

(S. Atran, 1990: 70)

The earliest known attempt to classify the reptiles of India was made during the Vedic period, based on form, reproductive mode, medium occupied (earth, air or water), the presumed number of sensory powers possessed, and whether wild or domesticated (Rao 1957, Ghildial-Sharma and Sharma 1989). For instance, the work 'Manu Smriti', compiled between 200 BC and 200 AD, classified animals on the basis of their reproductive modes, and snakes, crocodiles and tortoises, therefore, were grouped along with birds and fish, for being (primarily) oviparous. The UMASVATI, a Jain work written between 135-219 AD,

classified animals according to their sensory powers. Within this system, reptiles were grouped with humans, for possessing the senses of sight, hearing, taste, smell and touch. The classification systems of ancient Indian physicians, Charak and Susruta, made use of differences based on habitats, and the eight categories identified include aquatic species that live in water, those in dry hills, amphibious species and animals living in marshy or water-logged areas. The work SUSRUTA NAGARJUNA classified snakes into 5 groups (including both venomous and non-venomous).

So why did our ancestors consider it important to classify animals? There are two fundamentally opposing schools of thought. Diamond (1966) and Gould (1979) considered the primary purpose of indigenous names to be utilitarian. On the other hand, the complex classification and naming process (= folk taxonomy and nomenclature) support Berlin's (1992) theory that humans are innately curious about the natural world, and that names are supplied to species that may not always have a direct utilitarian value.

In taxonomy, the modern science of classification of animals and plants, it is said that stability of combinations of nomen is an indication of lack of progress! This generalisation is true for

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the herpetofauna of India and surrounding countries for the latter half of the last century, when workers had to depend on the three-volume (1931-43) monographic review of the herpetofauna of southern and parts of southeast Asia by Malcolm Arthur Smith. These volumes, which are understandably dated, did not cover the amphibians, despite giving their titles, though this group was covered in its entirety in an even earlier work, that of Boulenger (1890). This essay briefly summarises the history and direction of the modern science(s) of systematics and taxonomy, and thereafter reviews the status of taxonomy, systematics and nomenclature of reptiles inhabiting the Republic of India. It also analyses changes in the current understanding of the group compared with that which existed at the time of Malcolm Smith's monographs. The essay concludes with comments on the future of systematic research in the country. A glossary of technical terms used in systematics, taxonomy, nomenclature and in biogeography is appended.

LINNEAN CLASSIFICATION

"For his descriptions of living nature Linnaeus drew on his daily readings in Roman poetry, particularly Ovid and Virgil.... Read through the prism of later Romantic nature poetry, Linnaeus' nature writings are beautiful."
(L. Koerner, 1990: 23)

Classification is defined as the grouping of objects that share properties/attributes into classes, although contemporary practise of systematics and taxonomy places emphasis on common ancestry, rather than commonality of character states (see 'Phylogenetic classification').

The system of binomial nomenclature owes its existence to the Swedish physician, Carolus Linnaeus or Carl von Linné (1707-78). Linnaeus arranged all species of plants and animals known to him in a hierarchical scheme, arranging species within a genus, and genera within a family, and

families within a class. Nearly two million scientific names have been proposed for animal taxa since 1758 (Hammond 1992). Many were named in the last century, and most of these currently refer to taxa valid at present. Some are no longer in use, as they were subsequently shown to be a less recent name of an existing taxa (= junior synonyms) or same name for a different species (= homonym). More rarely, a name is not available because it has been suppressed by the International Commission of Zoological Nomenclature, for the purpose of achieving stability in names. However, names placed in synonymy do not disappear from use, they are listed as such and especially when groups are revised, some of these may be revived to accommodate distinct populations warranting a distinct taxonomic status, especially from within a constellation of closely related species.

To become available for any nomenclatural act in zoology, nomina (namely, names of taxa with a nomenclatural status) need to have several properties. They must be published intentionally as new, following the binomial system of nomenclature, as outlined in the Fourth Edition of the International Code of Zoological Nomenclature (International Commission of Zoological Nomenclature 1999). The earliest nomina available are those mentioned in the 10th edition of Linnaeus's *SYSTEMA NATURAE* (published in 1758), which was taken as the starting point for biological names. New names being proposed are to be followed by the words 'new species' or 'sp. nov.'; in the past, the word(s) or letters 'Mihi' or 'M' (meaning 'from me' or 'to me'), 'Nobis', 'Nob.' or 'N' ('from us' or 'to us') were used to indicate that a new name was being proposed. However, in older works, these were also used to designate new name combinations and spellings.

A few words about the origin and evolution of modern concepts of systematics and taxonomy may be in order. Contemporary classification of the living world is based on the Darwinian theory of evolution (or more accurately, the premise of common descent), and uses the Linnean system

of binomial nomenclature (after January 1, 1758), a 'downward' classification system. Hierarchies of the Linnean system, therefore, do not necessarily reflect natural (that is, geneological) relationships as understood at present (see Stevens 1997).

Categories in the Linnean system include: kingdom, phylum, class, order, family, genus (plural: genera), and species (singular and plural), and are used to convey information on relative positions of taxa in the taxonomic hierarchy. Standardised termination (suffix) of name indicates a specific category:

–*ini* is a Tribe name (e.g. Ranini, to which the common frogs belong)

–*inae* is a Subfamily name (e.g. Lygosominae, to which the slender-bodied scincid lizards belong)

–*idae* is a Family name (e.g. Varanidae, the family including monitor lizards and Bataguridae, the family to which hardshelled turtles of Asia are assigned)

–*oidea* is a Superfamily name (e.g. Gekkonoidea, to which gekkonids and eublepharids belong)

Scientific names of organisms are typically coined in ancient Greek or perhaps more commonly, in Latin, a language no longer in use (and therefore not subject to change, as those that are in use are). Latin and Greek were the languages of learned people, such as scientists and other scholars. Scientific names of organisms can also be derived from indigenous names, such as the nomen for the crocodilian *Gavialis* Oppel, 1811, derived from the north Indian vernacular name, for this sole living member of the Family, 'Gharial' (from ghara, meaning earthen-pot-like), an allusion to the narial excrescence in adult males. The 'r' was apparently misspelt 'v' in the original description.

PHYLOGENETIC CLASSIFICATION

"The conventional Linnaean hierarchy will not be able to survive alone: it will have to

coexist with the ideas and terminology of phylogenetic (cladistic) systematics...

...One should always keep in mind that an important function of classifications is information retrieval."

(Preface by A. Minelli & O. Kraus to the International Code of Zoological Nomenclature, Fourth Edition, 1999: XVII)

The number of species concepts in theory and practice continues to proliferate. The infertility criteria has been traditionally used as a marker for species limit in the Biological Species Concept, that defines species as reproductively isolated groups of interbreeding organisms, as opposed to the Recognition Species Concept (most inclusive population of individual biparental organisms which share a common fertilisation system) or the Phylogenetic Species Concept (clusters of organisms possessing uniquely shared characters). See also the section 'Species Concepts' for definitions of these and other concepts.

Some shortcomings of the Linnean system:

- Sometimes, the Linnean system is thought unnecessary for phylogenetic taxonomy;
- There is no information on common ancestry;
- The categories themselves are insufficient to specify relationships.

These problems make the adoption of the phylogenetic system of classification more attractive.

Emil Hans Willi Hennig (1913-76), in the mid-1900s, presented a system of classification based on phylogeny, underlining common descent as a criterion for relatedness and excludes reliance on mere similarity. Originally published in German in 1950 and translated into English in 1966, it argues that biological classification should be guided by the evolutionary theory ["The best general classification is one that exactly reflects the geneological (or phylogenetic) relationships"]. A phylogenetic tree constructed shows a branching diagram of entities with hypothesised geneological relationships and sequence of historical events.

The states for a particular character are identified in each ingroup and outgroup, the states polarised to distinguish ancestral (plesiomorphic) and derived (apomorphic) states, and the shared, derived (synapomorphic) states plotted onto the cladogram of the ingroup. The tree thus constructed shows the historical pathway followed within the ingroup in the evolution of a certain character. Modern phylogenetic systematics (also referred to as 'cladistics') therefore dates from the work of Hennig. Among the anomalies in the old vs. new systems of classification is the discovery that some groups (including Reptilia) are paraphyletic (i.e., their members do not share a common ancestor). The squamates form a natural group, lizards and snakes sharing sister relationships, and crocodilians are in fact closer to birds than to other living reptiles, and turtles are not related to either of these three groups, and have a somewhat unresolved relationship (see for instance, Rowe 1986). Thus, 'Reptilia' as a clade is an unnatural entity and comparisons made on their biology that exclude other groups, especially birds, are, at best, incomplete. Indeed, these findings challenge the naturalness of the group of organisms dealt with in the science of herpetology, a group that includes the amphibians (of uncertain relationships, although the group itself appears monophyletic; Zardoya and Meyer 2001). Nonetheless, two textbooks of herpetology have appeared in recent years (Pough *et al.* 1998, Zug *et al.* 2001), and there is a general proliferation of societies, journals and symposia dedicated to the science of herpetology.

Phylogenies provide important insights into taxonomy, including the evolution of characters and long-term patterns and dynamics of adaptation and divergence. The three overlapping charges of modern systematics include:

- The naming of species, according to the rules of nomenclature
- Their classification, and
- The reconstruction of phylogenies.

Thus, the purpose of classification of organisms has witnessed a shift away from the mere groupings of species at the time of Linnaeus, to the arrangement of taxa to show natural (or evolutionary) relationships. Recent advances in molecular techniques provide new characters for refining classification, that are particularly useful for recognition of cryptic species, recognition of large, unresolved groups and for resolving phylogenies at higher levels.

Despite its widespread acceptance for the past two and a half centuries, the Linnaean binomial nomenclature is now known to be logically incompatible with the phylogenetic nomenclature (*sensu* de Queiroz and Gauthier 1992). The concept of genus, in particular, while mandatory for binomial nomenclature, cannot be incorporated into a phylogenetic system of nomenclature, which requires abandonment of mandatory ranks. While no resolution to nomenclature under the system is at hand yet, Cantino *et al.* (1999) presented as many as 13 methods for naming species in the context of phylogenetic nomenclature. The systems take into account the stability, uniqueness and ease of pronunciation of species nomens; their capacity to convey phylogenetic information, and distinguish nomen governed by a Code of Phylogenetic Nomenclature (now under preparation) both from clade nomens and from species nomens governed by the current Codes of Botanical or Zoological Nomenclature.

SPECIES CONCEPTS

"In the consideration of competing species concepts it is necessary that systematists examine the precise implications of each, in terms of theory as well as practice."

(J.I. Davies, 1995: 556)

"In the field of nomenclature there is a set of rules to guide us, but when it comes to species concepts, it is 'everyone for himself' ..."

(J.W. Arntzen & A.M. Bauer, 1996: 321)

Malcolm Smith's tomes, upon which the contemporary classification of Indian reptiles (see Table 1) is largely based, follows the typological species concept. Type specimens are designated as an objective and non-ambiguous reference to a natural population of a specific taxa (Dubois and Ohler 1996). The type locality refers to the geographic area from where the sample was extracted. A single specimen that forms the basis for the description of a new species is referred to as 'holotype'. A series of specimens form syntypes ('cotypes' in the older literature). From the syntype series, a subsequent author (such as a reviser) can designate a lectotype, which becomes the nomen-bearing type. As a result, the rest of the syntypes become paralectotypes, and lose their primary type status. If types from the original description are lost, destroyed or otherwise not available for study, a neotype can be designated to bring stability to the group. Ideally, a neotype is obtained from the type locality or a locality close to it. Typological thinking of essentialism, which dates back to Aristotle, is non-evolutionary in nature, and one might therefore argue for the abandonment for such a non-evolutionary scheme of classification. Particularly, one of several lineage-based species concepts may be more appropriate, as these are consistent with the evolutionary history.

We assume here that species are real entities and not concepts for the purpose of understanding the natural world (see Hull 1976, for a discussion). Species concepts abound. Opposing camps offer the following (for more comprehensive reviews, see Ereshefsky 1992, Lee 1995):

The Biological Species Concept is associated with the idea that species are populations of interbreeding organisms, that are reproductively isolated from other such groups (see Mayr 1942, 1963).

The Evolutionary Species Concept emphasises the extension of species through time, defining species as a lineage of ancestral-descendant sequence of populations that evolve

separate from other such lineages, with its own unitary evolutionary role and tendencies (Simpson 1961, Wiley 1978). Frost and Hillis (1990) discussed the application of the Evolutionary Species Concept to herpetofaunal groups.

In the Recognition Species Concept, species definitions are associated with the 'recognition concept' emphasising the unification of species rather than their separation from one another. It emphasises common fertilisation and specific mate-recognition systems shared by conspecifics, rather than reproductive isolation between heterospecific organisms (Patterson 1980, 1985).

The Isolation Species Concept, an alternative to the Recognition Species Concept, emphasise reproductive isolation between organisms (Patterson 1985, Dobzhansky 1970).

The Ecological Species Concept, a modification of the Evolutionary Species Concept, emphasises the importance of ecologically based natural selection in maintaining species, which defines species as a lineage or a closely-related set of lineages that occupies an adaptive zone minimally different from that of any other lineage in its range and which evolves separately from all lineages outside its range (Van Valen 1976).

In the Phenotypic/Phenetic Species Concept, species definitions that emphasise the evidence and operations used to recognise species in taxonomic practice, especially those within phenetic or numerical taxonomy, and perceive species as discrete clusters of morphologically similar organisms, isolated from other such clusters (Sokal and Crovello 1970).

The Phylogenetic Species Concept, associated with phylogenetics or cladistics, is used for four classes of species definitions (Davies 1995). The Hennigian Species Concept recognises species as lineages that occupy the internodes of a phylogeny and go extinct when a speciation event takes place. The Autapomorphic (or Monophyletic) Species Concept recognises species as minimal monophyletic groupings, as

evidenced by autapomorphies. The Phylogenetic Species Concept recognises species as divergent population systems (with fixed or diagnostic characters combinations that need not be autapomorphic). Finally, the Geneological Species Concept is similar to the Autapomorphic Species Concept but replaces the emphasis on monophyly of organisms with monophyly of genes carried by organisms.

The General Lineage Concept of de Queiroz (1998) concludes, after reviewing the various species concepts, that these refer to all aspects or properties of a single common entity, and that differences between these definitions are not as disparate as it would appear (see also de Queiroz 1999).

Adoption of either Simpson's (1961) Evolutionary Species Concept or de Queiroz's (1998) General Lineage Concept, for instance, has led to dramatically altered faunal lists for Continental North America (Collins 1990), México (Grismer 1999) and the Philippines Archipelago (Brown and Diesmos 2001). As might be expected, difficulties in standardising lists (for biotic inventories and for a variety of other needs), as a result of proliferation of checklists based on different species concepts, exist not just for reptiles, but also for well-studied groups such as birds (see Helbig *et al.* 2002, McKittrick and Zink 1988).

THE CODE OF ZOOLOGICAL NOMENCLATURE

"Ordinary languages grow spontaneously in innumerable directions; but biological nomenclature has to be an exact tool that will convey a precise meaning for persons in all generations."

(Preface by J.C. Bradley to the International Code of Zoological Nomenclature, First Edition, 1961)

The word 'nomenclature' is derived from the Latin *nomen* (= name) + *calare* (= to call), and the function of scientific nomenclature is to

facilitate communication between biologists (who may speak different languages). In this essay, 'nomen' refers to scientific names, especially those coined according to the rules of binomial nomenclature. Scientific nomen are typically coined in Latin (a dead language) or ancient Greek. Article 36 of the Code of Botanical Nomenclature even makes it mandatory to provide descriptions or diagnoses of new species in Latin, although zoologists have been exempted from this practice. Nonetheless, the technical vocabulary of practising systematists rests on an extensive glossary of Latin, derived largely from the early works of Pliny the Elder (23-79 AD), with significant Greek influence (Stearns 1992).

The International Code of Zoological Nomenclature (ICZN) is the law-book for zoological systematists, and applies to both living and fossil animals (botanists and bacteriologists have their own Code of Nomenclature). It is based on, and defines the Linnean nomenclatural system of classification (ranks of taxa). The Code of Zoological Nomenclature appeared in 1886, and early authors are therefore sometimes inconsistent in their nomenclatorial practices. The current version is the Fourth Edition of 1999, which came into force from January 1, 2000, and replaces the Third Edition of 1985, and takes into account over 500 written comments by zoologists and groups of zoologists, made in response to a Discussion Draft that was distributed widely in 1995.

The Code adopted by the International Union of Biological Sciences, is in dual English-French texts, and published by the International Trust for Zoological Nomenclature, London. The publication comprises 90 Articles, a Glossary and two Appendices (Code of Ethics and General Recommendations). In its own words, the Code "provides the maximum universality and continuity in the scientific names of animals compatible with the freedom of scientists to classify all animals according to taxonomic judgement."

Some properties of scientific nomen include:

- uniqueness (no two species should have the same nomen),
- universality (one nomen applied to the same species worldwide), and
- stability (in case of old, unused nomen threatening relatively recent well-used nomen, the Commission has the powers to set aside the former).

The binomial system of nomenclature prescribes how nomen are to be written: every species has a generic nomen and specific nomen (e.g. *Homo sapiens*, for humans), and both generic and specific nomen are in italics. Subspecies nomen are also rendered in italics, but not categories above the genera, such as Family and Order nomen. ICZN makes it compulsory for nomen not to be hyphenated (e.g. *novae-guineae*) and special font types representing diacritic marks (e.g. accent, cedilla, tilde and umlat) are not permitted. The name of authority and year follow the scientific nomen (species/subspecies nomen) of taxon, without parentheses in case an original name suggested at the time of description is valid. If the species nomen has been allocated to a genus different from the one it was originally allocated to, the name(s) of author(s) are placed in parentheses. An invalid nomen (such as a junior synonym) may be written without the use of parentheses. Finally, nomen are available for use only if they are validly published (in journals, monographs, books and Faunas). Publication of new nomen in electronic media, meeting notices and conference abstracts do not constitute a formal publication from a nomenclatural standpoint. As for the nomen itself, every author is entitled to provide a nomen for a valid taxon, regardless of how long, unpronounceable, or grammatically incorrect it might be. Exceptions where the International Commission of Zoological Nomenclature have intervened are rare, and include the case of Dybowski's (1926) rather lengthy nomen such as *Siemieniewiczichinogammarus*, *Axelboeckia* *dermogammarus*,

Garjajewia *dermogammarus* and *Cancelloidia* *dermogammarus*, which were suppressed (Opinion 105, International Commission of Zoological Nomenclature 1929). Nomina with the potential to offend or hurt a community can also be suppressed.

Estimates of global species richness of animals varies between 5-15 million, of which slightly over a million species bear a scientific nomen (Erwin 1997, Stork and Gaston 1990). The geographical trend in the distribution of species is higher species richness in tropical, rather than temperate regions and high richness values for such environments as rainforests and coral reefs. Nonetheless, many species nomen are synonyms (duplicate names for the same biological species) or nomina dubia (names without reference to a biological species), making estimates of total species counts difficult (Alroy 2002). The most current inventory of the world's described species can be found at <http://www.sp2000.org>.

OLD TECHNIQUES AND NEW

"The development of time-shared, multi-access computing systems utilising standard teletype machines and the availability of extremely simple programming languages are recent events that provide an opportunity for some major changes in the work of systematists."
(J.A. Peters, 1969)

"In the 1950s, it was cytotoxicology... Counting chromosomes and analysing karyotypes was the 'in-thing', claiming to solve all taxonomic problems. Nearly concurrent with fun with numbers, was experimental taxonomy: determining species relationships by testing infertilities via hybridisation..."

Then in the mid-1960s another fad dominated the systematics scene — numerical taxonomy... The next holy grail was the fertile family of flavonoid compounds that took the spotlight during the era of chemotaxonomy. Note

that each of these fads faded, if not to oblivion, at least to second class citizenship...

And so now in the midst of the molecular taxonomy craze, I must ask: How long will it last? What is the life expectancy for this fun with isozymes and nucleic acids for the taxonomist? If the current preoccupation is anything like its predecessors, it will be replaced. By what? I predict that the next 'in thing' will be to determine the genetic basis of character differences."

(A.R. Kruckeberg, 1997)

Classifications of organisms have been traditionally based on morphology and anatomy, that is, structures that can be perceived by the naked human eye or through optical instruments (such as microscopes). Recent advances in physics and chemistry make it possible to utilise techniques that were unthinkable a few decades ago. These include bioacoustics (as it increasingly becomes evident how species-specific animal calls are, because of their connection with reproductive activity), and especially bio-chemical techniques, including protein electrophoresis.

Molecular systematics makes use of proteins and genes, in drawing systematic and biogeographic conclusions, including nuclear DNA (deoxyribonucleic acid), mitochondrial DNA and ribosomal nucleic acids (the basic assumption is that hereditary information is carried by molecules of DNA). Recent advances in molecular techniques provide new characters for refining classification. A variety of molecular techniques are available, including allozyme/isozyme analyses (comparisons in net electric charge); mitochondrial DNA (mtDNA, which is useful in reconstructing phylogenetic history), through PCR amplification and sequencing (allowing rapid amplification of sequences from a large number of samples). Phylogenetic reconstruction in molecular systematics is commonly done using mitochondrial gene sequences and less commonly, sequences of nuclear ribosomal RNA genes (see

reviews in Hillis *et al.* 1996).

Molecular techniques are also crucial for studies in phylogeography, described as "the field of study concerned with the principles and processes governing the geographical distribution of geneological lineages, especially those within and among closely-related species" (Avice 2000). Phylogeography is a subdiscipline of biogeography that seeks to interpret how historical processes have affected geographical distributions of gene-based organismal traits. Genetics provide answers to questions regarding measures of migration (gene flow) between populations and separating human-induced factors from natural cyclicity of population contraction and expansion. Two types of conservation units may be discernable, using tools in molecular phylogenies: management units (MUs), which represent sets of populations that are currently demographically independent and evolutionarily significant units (ESUs) that together encompass the evolutionary diversity of a taxon (Moritz 1996). Both are significant, the former for short-term management, the latter for long-term issues.

An archive of biological data and software to promote public access to freely available information can be found at <http://www.iubio.bio.indiana.edu>.

WHY SYSTEMATICS?

"Among many others, butchers and artists, farmers and showmen all deployed distinctive taxonomies in their work..."

(H. Ritvo, 1997: xii)

"For several of us, the priority is to document biodiversity and to provide identification tools: both are needed to promote awareness and conservation. This means goodbye to time-consuming, low output methods. Methods have to be selected, case by case, according to the material being investigated, the threats facing a habitat, the urgency of the

threats, the needed output, cost efficiency and context. In the real (non-academic) world, this is just called efficiency!"

(M. Kottelat, 1995)

Although systematic biology has been known to be inextricably linked to conservation biology, and indeed to human welfare itself, the principles of systematics have not entirely been integrated into the principles and practice of conservation science (Dimmick *et al.* 1999). For instance, classification and naming of organisms, especially endangered species, is the first step towards their recognition, and subsequently, their conservation and management. Poor knowledge of systematics and taxonomy have been considered responsible for the inability to recognise severe threats to the survival of many species of European freshwater fishes, a group under study for over 450 years (Kottelat 1997) and even for extinction of taxa (Daugherty *et al.* 1990). It is now generally acknowledged that many of the most important organisms in agriculture are little understood in the context of systematics, with serious implications for pest management and control, and sustainable agriculture (Miller and Rossman 1995). And it was systematists who drew global attention to the biodiversity crisis.

Systematic Agenda 2000, a global initiative to discover, describe and classify the world's species, is guided by a consortium of botanists and zoologists. It outlines a programme to discover, describe and inventory the Earth's biological diversity, seeks answers to four fundamental questions:

- What are the Earth's species?
- What are their properties?
- Where do they occur?
- How are they related?

Most of the world's systematists work through or with museums that have collections of preserved materials belonging to their particular group of specialisation. Natural history collections themselves have a variety of uses: apart from

having aesthetic and cultural values, they have proved invaluable in documenting the distribution, variation and seasonality of activity of species (Earl of Cranbrook 1996), and supporting studies of time series to investigate changes in ecology (Brooke 2000) and declines of extant species (Shaffer *et al.* 1998).

Notwithstanding the fact that a large number of museums, regional and national, exhibit natural history objects, only a few of these are genuinely research museums, in that they can hardly be considered caretakers of systematic resources and support a staff dedicated to undertaking full time research. Among the more well-known ones in India are the Zoological Survey of India, headquartered in Kolkata, with regional stations throughout the country, and the Natural History Museum of the Bombay Natural History Society in Mumbai. Both institutions have collections that date back to the middle or early part of the 19th Century, including many herpetological types. The staff of both institutions have traditionally played an important role in promoting systematic zoology in the country and their influence in the region has been significant, particularly in view of the fact that few tropical Asian countries have natural history museums (see Ng 2001). A research museum is thus the caretaker of not only biological specimens presented in life-like dioramas for the visiting public, but also a repository for skins, moults, casts, skeletons, cleared-and-stained as well as whole specimens in fluids, and their tissues, as well as associated information, such as georeferenced localities and ecological data, for scientists. The databases can be made publicly available either in hardcopy (such as the museum's official journals or occasional publications), softcopy on CDs and diskettes or on the Web, such as México's 1,069 bird species, listed at <http://chipotle.nhm.ukans.edu/nabin>. A large database, Atta (after the genus of leaf-cutting ants from the New World) of the Instituto Nacional de Biodiversidad (INBio), a scientific

institution, with 'social orientation' from Costa Rica, maintains a relational database comprising over 2 million records. Besides basic data, Atta also stores taxonomic information, photographs and illustrations, and is viewable at <http://www.inbio.ac.cr/en/default.html>.

Many of the species awaiting formal discovery by modern science in the future are predicted to be taxonomically cryptic, or similar to known species, hence simply not recognised until a thorough revision of the group is undertaken, sometimes utilising contemporary laboratory (including gene sequencing) and field (ecological and behavioural) techniques. Cryptic species are frequently localised, some restricted to patches of forests a few dozen hectares in extent or to one or two adjacent hill streams, making their discovery difficult, unless a concerted effort is made to conduct an exhaustive inventory. Other species may show populations with disjunctions, structured into well defined phylogenetic assemblages or metapopulations, some with significant genetic variants, all requiring careful consideration for identification and conservation (see Sites and Crandall 1997). Supplying names to these "hidden" species, thus, is the first step towards their universal recognition and protection (Longino 1993, Wheeler 1995). True, the recognition of cryptic species is increasing the conservation burden; it also emphasises the importance of moving away from taxon-based conservation to protection of the environment at the level of landscapes and ecosystems (Lovich and Gibbons 1997).

One of the goals of these studies is also to develop stable taxonomies of the fauna. A product for the public and often, for industry, as a result of these researches is comprehensive (i.e., covering all nominal taxa) monographs, revisions, field guides and other identification devices. Field guides are important in promoting conservation awareness and action and assisting capacity building. They are also resources supporting environmental assessments (such as monitoring

and evaluation) of development projects, encouraging ecotourism, building biodiversity databases, land-use planning through GIS applications and the production of regional and international Red Data Books of Threatened Species (Whitten 1996).

COMPARISONS WITH SMITH'S FAUNA

"Systematic collecting has been carried out in nearly all parts of the Indian Empire, and, except in the more inaccessible mountain districts, the herpetological fauna of the country is now pretty well known."

(M.A. Smith, 1931: 1)

Malcolm Smith's three volume Fauna of British India on 'Amphibia and Reptilia' (although the first group was not covered), published in 1931, 1935 and 1943, was a vastly revised edition of the 1890 volume bearing the same title by George Boulenger. The latter series was to set high standards for monographs that have been emulated by many others for different countries and regions of the world. Indeed, nearly half a century after the three volumes were published, they still remain the single most important source of information for practising reptile systematists and others who wish to obtain information on the region's reptile fauna. A large number of species have been described since the days of Malcolm Smith (who, incidentally, never conducted field work in India, but had material from Indian and other museums mailed to him in London), several species were omitted and a number have been synonymised under other species, or revived from synonymy. Several new genera have been created to house species known at the time of the Fauna, and a few have been relegated to the synonymy of existing genera. In this section of the essay, a comparison is made with the systematic knowledge of Indian reptiles at the time of Smith's Fauna and that which exists at present.

Table 1 presents a summary of species nomen of Indian reptiles that are considered valid. Column 1 lists the original nomen, retaining the original orthography; Column 2 lists the nomen as used in the Fauna of British India volumes; Column 3 provides the current nomen of the taxon; Column 4 provides the citation for the preceding nomen combination, if different from that in Column 3; and Column 5 provides additional nomenclatural remarks, as thought appropriate. Nomens of families, genera and species are arranged alphabetically, and not in any inferred evolutionary order. Finally, a glossary of technical terms is provided for non-systematists (Appendix 1). The cut-off date for the checklist was January 31, 2003.

The geographical coverage of Smith's Fauna was southern, and perhaps because Smith was more familiar with the southeast Asian region, being the Physician to the Royal Court of Bangkok (see Smith 1957 for an account), extending to mainland southeast Asia, up to southern Thailand. Among species now known to occur within the political boundaries of the Republic of India, 450 species were listed in Smith. The current checklist counts 506 species. Species concept employed by Smith, different approaches, not to mention paucity of material, are factors which are partially responsible for differences in the allocation of species nomen in the two columns. For instance, Smith's (1943) volume on snakes recognised a single species of Indian *Naja*, even treating the Andamans endemic, *sagittifera* as a synonym of *N. kaouthia*. More recent studies by Wüster (1998a) and Wüster and Thorpe (1992) have shown that a specific status is more appropriate for these populations. More importantly, the typological classification employed by systematists at the time of M.A. Smith has the potential to misrepresent actual biodiversity values in terms of species richness. Included in the problem is the more frequent usage at the time of Smith of the subspecies category [frowned upon by

proponents of the Evolutionary Species Concept (and other related concepts). However, the subspecies concept, synonymous with 'island races' (of Inger 1954, 1961) and pattern classes (e.g. Grismer *et al.* 1994, Shaffer and McKnight 1996), continues to have its proponents (see, for instance, Smith *et al.* 1997).

The two lists differ in other ways too. As many as 139 species are now assigned to genera different from that in Smith. The usage of names of species is made not only by systematists and taxonomists, but also by practising physiologists, geneticists, ecologists, conservationists, and policy makers, to name just a few end-users of taxonomic lists. Frequent name changes can be exasperating to many, some of whom perhaps unrealistically wish to have stability of names for a fauna that is poorly understood. However, as many as 308 species of Indian origin listed in Smith have been allocated to genera different from that originally described in, suggesting that we are on the path towards reaching a more natural system of classification, if the binomial system of nomenclature continues to survive. A number of species whose nomen were made available in older works were inexplicably unlisted in Smith's Fauna, even as synonyms, including *Asymblepharus tragbulensis* (Alcock, 1898), *Barkudia melanosticta* (Schneider, 1801), *Coluber vittacaudatus* Blyth, 1854 and *Typhlops exiguus* Jan in: Jan and Sordelli, 1864. It is possible that the present list too omits some valid species described in obscure works. Indeed, the non-availability of some publications has been a serious impediment to studies, and several critical works dealing with systematics and nomenclature of the region's reptiles are not easily accessible to biologists. These include unpublished theses (e.g. that of Moody 1980, which suggested the overhauling of the generic-level systematics of the Agamidae) and works in languages other than English, and frequently of limited circulation (that are far too numerous to mention in this essay).

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Table 1: Synopsis of names of reptile species known from India. Nomenclature in M.A. Smith's *Fauna* compared with that followed at present. For original names, the original orthography has been retained (including upper case first letters for species nomen, accents, etc.)

Original name	Name in Smith's Fauna	Current name	References	Remarks
CROCODYLIDAE				
<i>Crocodylus palustris</i> Lesson, 1831	<i>Crocodylus palustris</i>	<i>Crocodylus palustris</i>	-	-
<i>Crocodylus porosus</i> Schneider, 1801	<i>Crocodylus porosus</i>	<i>Crocodylus porosus</i>	-	-
GAVIALIIDAE				
<i>Lacerta gangetica</i> Gmelin, 1879	<i>Gavialis gangeticus</i>	<i>Gavialis gangeticus</i>	-	-
BATAGURIDAE				
<i>Emys baska</i> Gray, 1830	<i>Batagur baska</i>	<i>Batagur baska</i>	-	-
<i>Testudo amboinensis</i> Daudin, 1801	<i>Cuora amboinensis</i>	<i>Cuora amboinensis</i>	-	-
<i>Cyclemys oldhamii</i> Gray, 1863	<i>Cyclemys dentata</i>	<i>Cyclemys oldhamii</i>	Fritz et al. (1996, 1997)	-
<i>Emys Hamiltonii</i> Gray, 1831	<i>Geoclemys hamiltoni</i>	<i>Geoclemys hamiltonii</i>	-	-
<i>Geoemyda silvatica</i> Henderson, 1912	<i>Geoemyda silvatica</i>	<i>Geoemyda silvatica</i>	-	-
<i>Emys Thurjii</i> Gray, 1831	<i>Hardella thurji</i>	<i>Hardella thurjii</i>	-	-
<i>Emys dhongoka</i> Gray, 1832	<i>Kachuga dhongoka</i>	<i>Kachuga dhongoka</i>	-	-
<i>Emys kachuga</i> Gray, 1831	<i>Kachuga kachuga</i>	<i>Kachuga kachuga</i>	-	-
<i>Geomyda tricarinata</i> Blyth, "1855" 1856	<i>Geomyda tricarinata</i>	<i>Melanochelys tricarinata</i>	McDowell (1964)	-
<i>Emys trijuga</i> Schweigger, 1812	<i>Geoemyda trijuga</i>	<i>Melanochelys trijuga</i>	McDowell (1964)	-
<i>Batagur (Morenia) petersi</i> Anderson, "1878" 1879	<i>Morenia petersi</i>	<i>Morenia petersi</i>	-	-
<i>Batagur smithii</i> Gray, 1863	<i>Kachuga smithi</i>	<i>Pangshura smithii</i>	Das (2001); Iverson (in prep.); see also Moll (1987)	-
<i>Kachuga Sylhetensis</i> Jerdon, 1870	<i>Kachuga sylhetensis</i>	<i>Pangshura sylhetensis</i>	Das (2001); Iverson (in prep.); see also Moll (1987)	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Emys tectum</i> Bell in: Gray, 1831	<i>Kachuga tectum</i>	<i>Pangshura tectum</i>	Das (2001); Iverson (in prep.); see also Moll (1987)	-
<i>Emys tentoria</i> Gray, 1834	<i>Kachuga tectum tentoria</i>	<i>Pangshura tentoria</i>	Das (2001); Iverson (in prep.); see also Moll (1987)	-
<i>Cyclernys mouhotii</i> Gray, 1862	<i>Cyclernys mouhoti</i>	<i>Pyxidea mouhotii</i>	McDowell (1964)	-
CHELONIIDAE				
<i>Testudo Caretta</i>	<i>Caretta caretta</i> Linnaeus, 1758	<i>Caretta caretta olivacea</i>	-	Smith's (1931: 71) concept was a composite of <i>Caretta caretta</i> and <i>Lepidochelys olivacea</i>
<i>Testudo Mydas</i> Linnaeus, 1758	<i>Chelonia mydas</i>	<i>Chelonia mydas</i>	-	-
<i>Testudo imbricata</i> Linnaeus, 1766	<i>Eretmochelys imbricata</i>	<i>Eretmochelys imbricata</i>	-	-
<i>Chelonia olivacea</i> Eschscholtz, 1829	<i>Caretta caretta olivacea</i>	<i>Lepidochelys olivacea</i>	-	Smith's (1931: 71) concept was a composite of <i>Caretta caretta</i> and <i>Lepidochelys olivacea</i>
DERMOCHELYIDAE				
<i>Testudo coriacea</i> Vandelli, 1761	<i>Dermochelys coriacea</i>	<i>Dermochelys coriacea</i>	-	-
TESTUDINIDAE				
<i>Testudo elegans</i> Schoepff, 1795	<i>Testudo elegans</i>	<i>Geochelone elegans</i>	Crumly (1982, 1984)	-
<i>Testudo elongata</i> Blyth, 1853	<i>Testudo elongata</i>	<i>Indotestudo elongata</i>	Crumly (1982, 1984)	-
<i>Testudo travancorica</i> Boulenger, 1907	<i>Testudo travancorica</i>	<i>Indotestudo travancorica</i>	Crumly (1982, 1984)	-
<i>Testudo emys</i> Schlegel & Müller in: Temminck, 1840	<i>Testudo emys</i>	<i>Manouria emys</i>	Crumly (1982, 1984); Obst (1983)	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
TRIONYCHIDAE				
<i>Testudo cartilaginea</i> Boddaert, 1770	<i>Trionyx cartilagineus</i>	<i>Amyda cartilaginea</i>	Meylan (1987)	-
<i>Trionyx gangeticus</i> Cuvier, 1825	<i>Trionyx gangeticus</i>	<i>Aspideretes gangeticus</i>	Meylan (1987)	-
<i>Trionyx Hurum</i> Gray, 1831	<i>Trionyx hurum</i>	<i>Aspideretes hurum</i>	Meylan (1987)	-
<i>Trionyx Leithii</i> Gray, 1872	<i>Trionyx leithi</i>	<i>Aspideretes leithii</i>	Meylan (1987)	-
<i>Trionyx nigricans</i> Anderson, 1875	<i>Trionyx nigricans</i>	<i>Aspideretes nigricans</i>	Meylan (1987)	Reported from India by Praschag and Gemel (2002)
<i>Trionyx indicus</i> Gray, 1831	<i>Chitra indica</i>	<i>Chitra indica</i>	-	-
<i>Testudo punctata</i> Bonnaterre, 1789	<i>Lissemys punctata</i>	<i>Lissemys punctata</i>	-	-
<i>Pelochelys cantorii</i> Gray, 1864	<i>Pelochelys bibroni</i>	<i>Pelochelys cantorii</i>	Webb (1995)	Smith's (1931: 160) concept was a composite of <i>Pelochelys cantorii</i> and <i>P. bibroni</i>
AGAMIDAE				
<i>Agama minor</i> Hardwicke & Gray, 1827	<i>Agama minor</i>	<i>Brachysaura minor</i>	Moody (1980)	-
<i>Agama cristatella</i> Kuhl, 1820	<i>Calotes cristatellus</i>	<i>Bronchocela cristatella</i>	Moody (1980)	-
<i>Calotes danieli</i> Tiwari & Biswas, 1973	-	<i>Bronchocela danieli</i>	Moody (1980)	-
<i>Bronchocela jubata</i> Duméril & Bibron, 1837	<i>Calotes jubatus</i>	<i>Bronchocela jubata</i>	Moody (1980)	-
<i>Phrynocephalus laungwalansis</i> Sharma, 1978	-	<i>Bufoniceps laungwalansis</i>	Arnold (1992)	-
<i>Calotes andamanensis</i> Boulenger, 1891	<i>Calotes andamanensis</i>	<i>Calotes andamanensis</i>	-	-
<i>Lacerta calotes</i> Linnaeus, 1758	<i>Calotes calotes</i>	<i>Calotes calotes</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Calotes ellioti</i> Günther, 1864	<i>Calotes ellioti</i>	<i>Calotes ellioti</i>	-	-
<i>Calotes Emma</i> Gray, 1845	<i>Calotes emma</i>	<i>Calotes emma</i>	-	-
<i>Calotes grandisquamis</i> Günther, 1875	<i>Calotes grandisquamis</i>	<i>Calotes grandisquamis</i>	-	-
<i>Calotes jerdoni</i> Günther, "1870" 1871	<i>Calotes jerdoni</i>	<i>Calotes jerdoni</i>	-	-
<i>Calotes maria</i> Gray, 1845	<i>Calotes maria</i>	<i>Calotes maria</i>	-	-
<i>Calotes mystaceus</i> Duméril & Bibron, 1837	<i>Calotes mystaceus</i>	<i>Calotes mystaceus</i>	-	-
<i>Calotes nemoricola</i> Jerdon, 1853	<i>Calotes nemoricola</i>	<i>Calotes nemoricola</i>	-	-
<i>Calotes Rouxii</i> Duméril & Bibron, 1837	<i>Calotes rouxi</i>	<i>Calotes rouxii</i>	-	-
<i>Agama versicolor</i> Daudin, 1802	<i>Calotes versicolor</i>	<i>Calotes versicolor</i>	-	-
<i>Tiaris subcristata</i> Blyth, 1860	<i>Goniocephalus subcristatus</i>	<i>Coryphophylax subcristatus</i>	Moody (1980)	-
<i>Draco blanfordii</i> Boulenger, 1885	<i>Draco blanfordi</i>	<i>Draco blanfordii</i>	-	-
<i>Draco Dussumieri</i> Duméril & Bibron, 1837	<i>Draco dussumieri</i>	<i>Draco dussumieri</i>	-	-
<i>Japalura andersoniana</i> Annandale, 1905	<i>Japalura andersoniana</i>	<i>Japalura andersoniana</i>	-	-
<i>Acanthosaura kumaonensis</i> Annandale, 1907	<i>Japalura kumaonensis</i>	<i>Oriotarisis kumaonensis</i>	Kästle and Schleich (1998)	-
<i>Oreocalotes major</i> Jerdon, 1870	<i>Japalura major</i>	<i>Oriotarisis major</i>	Kästle and Schleich (1998)	-
<i>Japalura planidorsata</i> Jerdon, 1870	<i>Japalura planidorsata</i>	<i>Japalura planidorsata</i>	-	-
<i>Calotes tricarinatus</i> Blyth, 1853	<i>Japalura tricarinata</i>	<i>Oriotarisis tricarinata</i>	Kästle and Schleich (1998)	-
<i>Japalura variegata</i> Gray, 1853	<i>Japalura variegata</i>	<i>Japalura variegata</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Stellio agorensis</i> Stoliczka, 1872	<i>Agama agorensis</i>	<i>Laudakia agorensis</i>	Moody (1980)	-
<i>Stellio caucasi</i> Eichwald, 1831	<i>Agama caucasica</i>	<i>Laudakia caucasica</i>	Moody (1980)	-
<i>Stellio Dayanus</i> Stoliczka, 1871	<i>Agama tuberculata</i>	<i>Laudakia dayana</i>	Baig and Böhme (1997)	-
<i>Stellio Himalayanus</i> Steindachner, 1867	<i>Agama himalayana</i>	<i>Laudakia himalayana</i>	Moody (1980)	As junior synonym of <i>Agama tuberculata</i>
<i>Laudakia (?) melanura</i> Blyth, 1854	<i>Agama melanura</i>	<i>Laudakia melanura</i>	Moody (1980)	-
<i>Agama pakistanica</i> Baig, 1989	-	<i>Laudakia pakistanica</i>	-	-
<i>A. (=Agama) tuberculata</i> Hardwicke & Gray, 1827	<i>Agama tuberculata</i>	<i>Laudakia tuberculata</i>	Moody (1980)	-
<i>Salea austeniana</i> Annandale, 1908	<i>Mictopholis austeniana</i>	<i>Mictopholis austeniana</i>	-	-
<i>Oriocalotes paulus</i> Smith, 1935	<i>Oriocalotes paulus</i>	<i>Oriocalotes paulus</i>	-	-
<i>Otocryptis beddomii</i> Boulenger, 1885	<i>Otocryptis beddomii</i>	<i>Otocryptis beddomii</i>	-	-
<i>Phrynocephalus alticola</i> Peters, 1984	-	<i>Phrynocephalus alticola</i>	-	-
<i>Phrynocephalus reticulatus</i> Eichwald, 1831	<i>Phrynocephalus reticulatus</i>	<i>Phrynocephalus theobaldi reticulatus</i>	-	-
<i>Phrynocephalus Theobaldi</i> Blyth, 1863	<i>Phrynocephalus theobaldi</i>	<i>Phrynocephalus theobaldi</i>	-	-
<i>Charasia blanfordana</i> Stoliczka, 1871	<i>Psammophilus blanfordanus</i>	<i>Psammophilus blanfordanus</i>	-	-
<i>Agama Dorsalis</i> Gray in: Griffith & Pidgeon, 1831	<i>Psammophilus dorsalis</i>	<i>Psammophilus dorsalis</i>	-	-
<i>Calotes microlepis</i> Boulenger, 1887	<i>Calotes microlepis</i>	<i>Pseudocalotes microlepis</i>	Moody (1980)	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Otocryptis (Ptyctolaemus) gularis</i> Peters, 1864	<i>Ptyctolaemus gularis</i>	<i>Ptyctolaemus gularis</i>	-	-
<i>Lophosalea anamallayana</i> Beddome, 1878	<i>Salea anamallayana</i>	<i>Salea anamallayana</i>	-	-
<i>Salea Horsfieldii</i> Gray, 1845	<i>Salea horsfieldi</i>	<i>Salea horsfieldii</i>	-	-
<i>Sit. (=Sitana) ponticeriana</i> Cuvier, 1829	<i>Sitana ponticeriana</i>	<i>Sitana ponticeriana</i>	-	-
<i>Agama agilis</i> Olivier, 1804	<i>Agama agilis</i>	<i>Trapelus agilis</i>	Moody (1980)	-
<i>Trapelus megalonyx</i> Günther, 1864	<i>Agama megalonyx</i>	<i>Trapelus megalonyx</i>	Moody (1980)	-
ANGUIDAE				
<i>Pseudopus gracilis</i> Gray, 1845	<i>Ophisaurus gracilis</i>	<i>Ophisaurus gracilis</i>	-	-
CHAMAELEONIDAE				
<i>Chamaeleo zeylanicus</i> Laurenti, 1768	<i>Chamaeleo zeylanicus</i>	<i>Chamaeleo zeylanicus</i>	-	-
DIBAMIDAE				
<i>Rhinophidion Nicobaricum</i> Steindachner, 1867	<i>Dibamus novae-guineae</i>	<i>Dibamus nicobaricus</i>	Das (1996)	Smith's (1935: 362) concept was a composite of at least <i>Dibamus nicobaricus</i> , <i>D. alfredi</i> , <i>D. novaeguineae</i> and <i>D. leucurus</i>
EUBLEPHARIDAE				
<i>Eublepharis macularius fuscus</i> Börner, 1981	-	<i>Eublepharis fuscus</i>	Das (1998)	Elevated to the rank of species by Das (1998)
<i>Eublepharis Hardwickii</i> Gray, 1827	<i>Eublepharis hardwickii</i>	<i>Eublepharis hardwickii</i>	-	-
<i>Cyrtodactylus macularius</i> Blyth, 1854	<i>Eublepharis macularius</i>	<i>Eublepharis macularius</i>	-	-
GEKKONIDAE				
<i>Alsophylax (Altiphylax) boehmei</i> Szczerbak, 1991	-	<i>Alsophylax boehmei</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Calodactylus aureus</i> Beddome, 1870	<i>Calodactylodes aureus</i>	<i>Calodactylodes aureus</i>	-	-
<i>Cnemaspis assamensis</i> Das & Sengupta, 2000	-	<i>Cnemaspis assamensis</i>	-	-
<i>Gymnodactylus Beddomei</i> Theobald, 1876	<i>Cnemaspis beddomei</i>	<i>Cnemaspis beddomei</i>	-	-
<i>Goniodactylus Boëi</i> Gray, 1842	<i>Cnemaspis boiei</i>	<i>Cnemaspis boei</i>	-	Illegal emendation of the species name in Smith (1935: 75)
<i>Cnemaspis goaensis</i> Sharma, 1976	-	<i>Cnemaspis goaensis</i>	-	-
<i>Gymnodactylus gracilis</i> Beddome, 1870	<i>Cnemaspis gracilis</i>	<i>Cnemaspis gracilis</i>	-	-
<i>Cnemaspis heteropholis</i> Bauer, 2002	-	<i>Cnemaspis heteropholis</i>	-	-
<i>Goniodactylus indicus</i> Gray, 1846	<i>Cnemaspis indica</i>	<i>Cnemaspis indica</i>	-	-
<i>Cnemaspis indraneildasii</i> Bauer, 2002	<i>Cnemaspis kandiana</i> (in part)	<i>Cnemaspis indraneildasii</i>	-	Western Ghats populations referred by Smith (1935: 73) to <i>Cnemaspis kandiana</i> now <i>C. indraneildasii</i> Bauer (2002)
<i>Gymnodactylus Jerdonii</i> Theobald, 1868	<i>Cnemaspis jerdoni</i>	<i>Cnemaspis jerdonii</i>	-	-
<i>Gymnodactylus Kandianus</i> Kelaart, 1852	<i>Cnemaspis kandiana</i>	<i>Cnemaspis kandiana</i>	-	Systematic status of most of the Indian (including Andaman and Nicobar Islands) populations under investigation
<i>Gymnodactylus littoralis</i> Jerdon, 1853	<i>Cnemaspis littoralis</i>	<i>Cnemaspis littoralis</i>	-	-
<i>Gymnodactylus Mysoriensis</i> Jerdon, 1853	<i>Cnemaspis mysoriensis</i>	<i>Cnemaspis mysoriensis</i>	-	-
<i>Cnemaspis nairi</i> Inger, Marx & Koshy, 1984	-	<i>Cnemaspis nairi</i>	-	-

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<i>Gymnodactylus ornatus</i> Beddome, 1870	<i>Cnemaspis ornata</i>	<i>Cnemaspis ornata</i>	-	-
<i>Cnemaspis otai</i> Das & Bauer, 2000	-	<i>Cnemaspis otai</i>	-	-
<i>Gymnodactylus Sisparensis</i> Theobald, 1876	<i>Cnemaspis sisparensis</i>	<i>Cnemaspis sisparensis</i>	-	-
<i>Cnemaspis kandianus tropidogaster</i> Boulenger, 1885	<i>Cnemaspis kandiana</i>	<i>Cnemaspis tropidogaster</i>	Inger et al. (1984a)	Treated as a junior synonym of <i>Cnemaspis kandiana</i> by Smith (1935: 73)
<i>Gymnodactylus Wynadensis</i> Beddome, 1870	<i>Cnemaspis wynadensis</i>	<i>Cnemaspis wynadensis</i>	-	-
<i>Cnemaspis yercaudensis</i> Das & Bauer, 2000	-	<i>Cnemaspis yercaudensis</i>	-	-
<i>Stellio platyurus</i> Schneider, 1792	<i>Platyurus platyurus</i>	<i>Cosymbotus platyurus</i>	-	-
<i>Stenodactylus orientalis</i> Blanford, 1875	<i>Stenodactylus orientalis</i>	<i>Crossobamon orientalis</i>	Kluge (1967)	-
<i>Cyrtodactylus adleri</i> Das, 1997	-	<i>Cyrtodactylus adleri</i>	-	-
<i>Gymnodactylus chitralensis</i> Smith, 1935	<i>Gymnodactylus chitralensis</i>	<i>Cyrtodactylus chitralensis</i>	Kluge (1993)	-
<i>Naultinus (?) fasciolatus</i> Blyth, 1860	<i>Gymnodactylus fasciolatus</i>	<i>Cyrtodactylus fasciolatus</i>	Kluge (1993)	-
<i>Gymnodactylus gubernatoris</i> Annandale, 1913	<i>Gymnodactylus gubernatoris</i>	<i>Cyrtodactylus gubernatoris</i>	Kluge (1993)	-
<i>Cyrtodactylus himalayanus</i> Duda & Sahi, 1978	-	<i>Cyrtodactylus himalayanus</i>	Kluge (1993)	-
<i>Pentadactylus Khasiensis</i> Jerdon, 1870	<i>Gymnodactylus khasiensis</i>	<i>Cyrtodactylus khasiensis</i>	Kluge (1993)	-
<i>Gymnodactylus Lawderanus</i> Stoliczka, 1871	<i>Gymnodactylus lawderanus</i>	<i>Cyrtodactylus lawderanus</i>	Kluge (1993)	-

Table 1: Synopsis of names of reptile species known from India. Nomenclature in M.A. Smith's *Fauna* compared with that followed at present. For original names, the original orthography has been retained (including upper case first letters for species nomen, accents, etc.) (contd.)

Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Gymnodactylus malcolmsmithii</i> Constable, 1949	-	<i>Cyrtodactylus malcolmsmithi</i>	Kluge (1993)	-
<i>Cyrtodactylus mansarulus</i> Duda & Sahi, 1978	-	<i>Cyrtodactylus mansarulus</i>	Kluge (1993)	-
<i>Cyrtodactylus pulchellus</i> Hardwicke & Gray, 1827	<i>Gymnodactylus pulchellus</i>	<i>Cyrtodactylus pulchellus</i>	Kluge (1993)	Not specifically recorded from India by Smith (1935), but cited on p. 38
<i>Puellula rubida</i> Blyth, 1860	<i>Gymnodactylus rubidus</i>	<i>Cyrtodactylus rubidus</i>	Kluge (1993)	-
<i>Gymnodactylus stoliczkai</i> Steindachner, 1867	<i>Gymnodactylus stoliczkai</i>	<i>Cyrtodactylus stoliczkai</i>	Kluge (1993)	-
<i>Gymnodactylus walli</i> Ingoldby, 1922	<i>Gymnodactylus stoliczkai</i>	<i>Cyrtodactylus walli</i>	Kluge (1993)	Listed as a junior synonym of <i>Gymnodactylus stoliczkai</i> by Smith (1935: 57)
<i>Cyrtodactylus aravallensis</i> Gill, 1997	-	<i>Cyrtopodion aravallensis</i>	Kluge (2001)	-
<i>Gymnodactylus kachhensis</i> Stoliczka, 1872	<i>Gymnodactylus kachhensis</i> <i>kachhensis</i>	<i>Cyrtopodion kachhense</i>	Kluge (1993)	-
<i>Gymnodactylus montium-salsorum</i> Annandale, 1913	<i>Gymnodactylus montium-salsorum</i>	<i>Cyrtopodion montiumsalsorum</i>	Kluge (1993)	-
<i>Stenodactylus scaber</i> von Heyden in: Rüppell, 1827	<i>Gymnodactylus scaber</i>	<i>Cyrtopodion scabrum</i>	Kluge (1993)	-
<i>Gymnodactylus Collegalensis</i> Beddome, 1870	<i>Gymnodactylus collegalensis</i>	<i>Geckoella collegalensis</i>	Kluge (1993)	-
<i>Gymnodactylus deccanensis</i> Günther, 1864	<i>Gymnodactylus dekkanensis</i>	<i>Geckoella dekkanensis</i>	Kluge (1993)	-
<i>Gymnodactylus Jeyporensis</i> Beddome, 1877	<i>Gymnodactylus jeyporensis</i>	<i>Geckoella jeyporensis</i>	Kluge (1993)	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Gymnodactylus nebulosus</i> Beddome, 1870	<i>Gymnodactylus nebulosus</i>	<i>Geckoella nebulosa</i>	Kluge (1993)	-
<i>Hemidactylus (Peropus) mutilatus</i> Wiegmann, 1834	<i>Gehyra mutilata</i>	<i>Gehyra mutilata</i>	-	-
<i>Lacerta gecko</i> Linnaeus, 1758	<i>Gekko gecko</i>	<i>Gekko gecko</i>	-	-
<i>Gecko Smithii</i> Gray, 1842	<i>Gekko smithi</i>	<i>Gekko smithi</i>	-	-
<i>Gecko Verreauxi</i> Tytler, "1864" 1865	<i>Gekko smithi</i>	<i>Gekko verreauxi</i>	Ota et al. (1991)	-
<i>Gecko Anamalensis</i> Günther, 1875	<i>Dravidogekko anamallensis</i>	<i>Hemidactylus anamallensis</i>	Bauer and Russell (1995)	-
<i>Doryura Bowringii</i> Gray, 1845	<i>Hemidactylus bowringi</i>	<i>Hemidactylus bowringii</i>	-	-
<i>Hemidactylus Brookii</i> Gray, 1845	<i>Hemidactylus brooki</i>	<i>Hemidactylus brookii</i>	-	-
<i>Hemidactylus flaviviridis</i> Rüppell, 1835	<i>Hemidactylus flaviviridis</i>	<i>Hemidactylus flaviviridis</i>	-	-
<i>Hemidactylus frenatus</i> Duméril & Bibron, 1836	<i>Hemidactylus frenatus</i>	<i>Hemidactylus frenatus</i>	-	-
<i>Hemidactylus Garnotii</i> Duméril & Bibron, 1836	<i>Hemidactylus garnoti</i>	<i>Hemidactylus garnotii</i>	-	-
<i>Hemidactylus giganteus</i> Stoliczka, 1871	<i>Hemidactylus giganteus</i>	<i>Hemidactylus giganteus</i>	-	-
<i>Hemidactylus gracilis</i> Blanford, 1870	<i>Hemidactylus gracilis</i>	<i>Hemidactylus gracilis</i>	-	-
<i>Doryura karenorum</i> Theobald, 1868	<i>Hemidactylus karenorum</i>	<i>Hemidactylus karenorum</i>	-	-
<i>Hemidactylus leschenaultii</i> Duméril & Bibron, 1836	<i>Hemidactylus leschenaulti</i>	<i>Hemidactylus leschenaultii</i>	-	-
<i>Hemidactylus maculatus</i> Duméril & Bibron, 1836	<i>Hemidactylus maculatus</i>	<i>Hemidactylus maculates</i>	-	-
<i>Hemidactylus mahendrai</i> Shukla, 1983	-	<i>Hemidactylus mahendrai</i>	-	-

Table 1: Synopsis of names of reptile species known from India. Nomenclature in M.A. Smith's *Fauna* compared with that followed at present. For original names, the original orthography has been retained (including upper case first letters for species nomen, accents, etc.). (contd.)

Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Hemidactylus porbandarensis</i> Sharma, 1981	-	<i>Hemidactylus porbandarensis</i>	-	-
<i>Hemidactylus prashadi</i> Smith, 1935	<i>Hemidactylus prashadi</i>	<i>Hemidactylus prashadi</i>	-	-
<i>Hemidactylus reticulatus</i> Beddome, 1870	<i>Hemidactylus reticulatus</i>	<i>Hemidactylus reticulatus</i>	-	-
<i>Teratolepis scabriceps</i> Annandale, 1906	<i>Lophopholis scabriceps</i>	<i>Hemidactylus scabriceps</i>	Loveridge (1947)	-
<i>Hemidactylus subtriedrus</i> Jerdon, 1853	<i>Hemidactylus subtriedrus</i>	<i>Hemidactylus subtriedrus</i>	-	-
<i>Gecko triedrus</i> Daudin, 1802	<i>Hemidactylus triedrus</i>	<i>Hemidactylus triedrus</i>	-	-
<i>Hemidactylus aurantiacus</i> Beddome, 1870	<i>Hemiphyllodactylus typus aurantiacus</i>	<i>Hemiphyllodactylus aurantiacus</i>	Bauer and Das (1999)	-
<i>Hemiphyllodactylus typus</i> Bleeker, 1860	<i>Hemiphyllodactylus typus typus</i>	<i>Hemiphyllodactylus typus</i>	-	-
<i>Platydyctylus Lugubris</i> Duméril & Bibron, 1836	<i>Lepidodactylus lugubris</i>	<i>Lepidodactylus lugubris</i>	-	As currently understood, a species complex, with both bisexual and unisexual populations
<i>Phelsuma andamanense</i> Blyth, 1860	<i>Phelsuma andamanense</i>	<i>Phelsuma andamanense</i>	-	-
<i>Ptychozoon kuhli</i> Stejneger, 1902	<i>Ptychozoon kuhli</i>	<i>Ptychozoon kuhli</i>	-	Replacement name for <i>Lacerta homalocephala</i> Creveld, 1809
<i>Ptychozoon homalocephalum</i> Var. <i>lionotum</i> Annandale, 1905	<i>Ptychozoon lionotum</i>	<i>Ptychozoon lionotum</i>	-	-
<i>Hemidactylus albofasciatus</i> Grandison & Soman, 1963	-	<i>Teratolepis albofasciatus</i>	-	-
LACERTIDAE				
<i>Acanthodactylus cantoris</i> Günther, 1864	<i>Acanthodactylus cantoris cantoris</i>	<i>Acanthodactylus cantoris</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Eremias</i> [<i>Mesalina</i>] <i>Watsonana</i> Stoliczka, 1872	<i>Eremias guttulata watsonana</i>	<i>Mesalina watsonana</i>	Arnold (1986); Anderson (1999)	-
<i>Pseudophiops Beddomei</i> Jerdon, 1870	<i>Ophisops beddomei</i>	<i>Ophisops beddomei</i>	-	-
<i>Ophisops Jerdoni</i> Blyth, 1853	<i>Ophisops jerdoni</i>	<i>Ophisops jerdoni</i>	-	-
<i>Lacerta Leschenaultii</i> Milne-Edwards, 1829	<i>Ophisops leschenaultii</i>	<i>Ophisops leschenaultii</i>	-	-
<i>Ophiops</i> [<i>Gymnops</i>] <i>Microlepis</i> Blanford, 1870	<i>Ophisops microlepis</i>	<i>Ophisops microlepis</i>	-	-
<i>Cabrita jerdoni minor</i> Deraniyagala, 1971	<i>Cabrita jerdoni</i>	<i>Ophisops minor</i>	Arnold (1989); Böhme and Bischoff (1991)	-
<i>Tachydromus Haughtonianus</i> Jerdon, 1870	<i>Takydromus haughtonianus</i>	<i>Takydromus haughtonianus</i>	-	-
<i>Tachydromus khasiensis</i> Boulenger, 1917	<i>Takydromus sexlineatus khasiensis</i>	<i>Takydromus khasiensis</i>	-	-
<i>Takydromus sexlineatus</i> Daudin, 1802	<i>Takydromus sexlineatus</i>	<i>Takydromus sexlineatus</i>	-	-
SCINCIDAE				
<i>Blepharosteres Grayanus</i> Stoliczka, 1872	<i>Ablepharus grayanus</i>	<i>Ablepharus grayanus</i>	-	-
<i>Sc.</i> (= <i>Scincus</i>) <i>pannonicus</i> Lichtenstein, 1823	<i>Ablepharus pannonicus</i>	<i>Ablepharus pannonicus</i>	-	-
<i>Eumeces himalayanus</i> Günther, 1864	<i>Leiolopisma himalayanum</i>	<i>Asymblepharus himalayanum</i>	Eremchenko and Szczerebak (1980)	-
<i>Eumeces ladacensis</i> Günther, 1864	<i>Leiolopisma ladacense</i>	<i>Asymblepharus ladacensis</i>	Eremchenko and Szczerebak (1980)	-
<i>Mococa Sikimmensis</i> Blyth, 1853	<i>Leiolopisma sikkimense</i>	<i>Asymblepharus sikimmensis</i>	Eremchenko and Szczerebak (1980)	-
<i>Lygosoma himalayanum</i> var. <i>tragbulensis</i> Alcock, "1897" 1898	-	<i>Asymblepharus tragbulense</i>	Das <i>et al.</i> (1998)	Not included in Smith (1935).

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Barkudia insularis</i> Annandale, 1917	<i>Barkudia insularis</i>	<i>Barkudia insularis</i>	-	-
<i>Anguis melanosticta</i> Schneider, 1801	-	<i>Barkudia melanosticta</i>	Das (2000)	Not included in Smith (1943)
<i>Sphenomorphus?</i> <i>pentadactylus</i> Beddome, 1870	<i>Chalcides</i> <i>pentadactylus</i>	<i>Chalcides</i> <i>pentadactylus</i>	-	-
<i>Euprepes halianus</i> Haly & Nevill in: Nevill, 1887	<i>Dasia halianus</i>	<i>Dasia halianus</i>	-	-
<i>Dasia nicobarensis</i> Biswas & Sanyal, 1977	-	<i>Dasia nicobarensis</i>	-	-
<i>Dasia olivacea</i> Gray, 1839	<i>Dasia olivacea</i>	<i>Dasia olivacea</i>	-	-
<i>Lygosoma subcaeruleum</i> Boulenger, 1891	<i>Dasia subcaerulea</i>	<i>Dasia subcaeruleum</i>	-	-
<i>Eumeces poonaensis</i> Sharma, 1970	-	<i>Eurylepis poonaensis</i>	Griffith et al. (2000)	-
<i>Eurylepis taeniolatus</i> Blyth, 1854	<i>Eumeces taeniolatus</i>	<i>Eurylepis taeniolatus</i>	Griffith et al. (2000)	-
<i>Mococa macrotympanum</i> Stoliczka, 1873	<i>Leiolopisma</i> <i>macrotympanum</i>	<i>Lipinia macrotympana</i>	Greer (1974)	-
<i>Riopa albopunctata</i> Gray, 1846	<i>Riopa albopunctata</i>	<i>Lygosoma albopunctata</i>	Greer (1977)	-
<i>Riopa ashwamedhi</i> Sharma, 1969	-	<i>Lygosoma ashwamedhi</i>	-	-
<i>Eumeces bowringii</i> Günther, 1864	<i>Riopa bowringi</i>	<i>Lygosoma bowringii</i>	Greer (1977)	-
<i>Riopa goaensis</i> Sharma, 1976	-	<i>Lygosoma goaensis</i>	-	-
<i>Eumeces Güntheri</i> Peters, 1879	<i>Riopa guentheri</i>	<i>Lygosoma guentheri</i>	Greer (1977)	-
<i>Chiamela lineata</i> Gray, 1839	<i>Riopa lineata</i>	<i>Lygosoma lineata</i>	Greer (1977)	-
<i>Riopa pruthi</i> Sharma, 1977	-	<i>Lygosoma pruthi</i>	-	-
<i>Scincus punctatus</i> Gmelin, 1799	<i>Riopa punctata</i>	<i>Lygosoma punctata</i>	Greer (1977)	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Mabuya allapallensis</i> Schmidt, 1926	<i>Mabuya macularia</i>	<i>Mabuya allapallensis</i>	-	Junior synonym of <i>Mabuya macularia</i> in Smith (1935: 264)
<i>Mabuya andamanensis</i> Smith, 1935	<i>Mabuya andamanensis</i>	<i>Mabuya andamanensis</i>	-	-
<i>Euprepes Beddomei</i> Jerdon, 1870	<i>Mabuya beddomii</i>	<i>Mabuya beddomei</i>	-	-
<i>Tiliqua Bibronii</i> Gray, "1838" 1839	<i>Mabuya bibroni</i>	<i>Mabuya bibronii</i>	-	-
<i>Scincus Carinatus</i> Schneider, 1801	<i>Mabuya carinata</i>	<i>Mabuya carinata</i>	-	-
<i>Mabuya clivicola</i> Inger, Shaffer, Koshy & Bakde, 1984	-	<i>Mabuya clivicola</i>	-	-
<i>Euprepes dissimilis</i> Hallowell, 1857	<i>Mabuya dissimilis</i>	<i>Mabuya dissimilis</i>	-	-
<i>Mabuya gansi</i> Das, 1991	-	<i>Mabuya gansi</i>	-	-
<i>Euprepes innotatus</i> Blanford, 1870	<i>Mabuya innotata</i>	<i>Mabuya innotata</i>	-	-
<i>Euprepes macularius</i> Blyth, 1853	<i>Mabuya macularia</i>	<i>Mabuya macularia</i>	-	-
<i>Scincus multifasciatus</i> Kuhl, 1820	<i>Mabuya multifasciata multifasciata</i>	<i>Mabuya multifasciata</i>	-	-
<i>Mabuya nagarjuni</i> Sharma, 1969	-	<i>Mabuya nagarjuni</i>	-	-
<i>Euprepes novem-carinatus</i> Anderson, 1871	<i>Mabuya novemcarinata</i>	<i>Mabuya novemcarinata</i>	-	-
<i>Mabuia quadricarinata</i> Boulenger, 1887	<i>Mabuya quadricarinata</i>	<i>Mabuya quadricarinata</i>	-	-
<i>Mabuya rudis</i> Boulenger, 1887	<i>Mabuya multifasciata rudis</i>	<i>Mabuya rudis</i>	-	-
<i>Tiliqua rugifera</i> Stoliczka, 1870	<i>Mabuya rugifera</i>	<i>Mabuya rugifera</i>	-	-
<i>T. (= Tiliqua) trivittata</i> Hardwicke & Gray, 1827	<i>Mabuya trivittata</i>	<i>Mabuya trivittata</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Scincus Tytlerii</i> Tytler in: Theobald, 1868	<i>Mabuya tytleri</i>	<i>Mabuya tytlerii</i>	-	-
<i>Scincus Schneiderii</i> Daudin, 1802	<i>Eumeces schneideri</i>	<i>Novoeumeces schneiderii</i>	Griffith et al. (2000)	-
<i>Ophiomorus raithmai</i> Anderson & Leviton, 1966	-	<i>Ophiomorus raithmai</i>	Smith's (1935: 346-347) concept was a composite of <i>Ophiomorus tridactylus</i> and <i>O. raithmai</i>	-
<i>Ristella beddomii</i> Boulenger, 1887	<i>Ristella beddomii</i>	<i>Ristella beddomii</i>	-	-
<i>Ristella guentheri</i> Boulenger, 1887	<i>Ristella guentheri</i>	<i>Ristella guentheri</i>	-	-
<i>Ristella Rurkii</i> Gray, 1839	<i>Ristella rurki</i>	<i>Ristella rurkii</i>	-	-
<i>Ateuchosaurus Travancoricus</i> Beddome, 1870	<i>Ristella travancorica</i>	<i>Ristella travancoricus</i>	-	-
<i>Lygosoma beddomii</i> Boulenger, 1887	<i>Leiolopisma beddomei</i>	<i>Scincella beddomii</i>	Greer (1974); Ouboter (1986)	-
<i>Mocoa bilineata</i> Gray, 1846	<i>Leiolopisma bilineatum</i>	<i>Scincella bilineatum</i>	Greer (1974); Ouboter (1986)	-
<i>Lygosoma laterimaculatum</i> Boulenger, 1887	<i>Leiolopisma laterimaculatum</i>	<i>Scincella laterimaculatum</i>	Greer (1974); Ouboter (1986)	-
<i>Euprepes macrotis</i> Steindachner, 1867	<i>Leiolopisma macrotis</i>	<i>Scincella macrotis</i>	Greer (1974); Ouboter (1986)	-
<i>Lygosoma (Leiolopisma) travancoricum</i> var. <i>palnica</i> Boettger, 1892	<i>Leiolopisma palnicum</i>	<i>Scincella palnicum</i>	Greer (1974); Ouboter (1986)	-
<i>Mocoa Travancorica</i> Beddome, 1870	<i>Leiolopisma travancoricum</i>	<i>Scincella travancoricum</i>	Greer (1974); Ouboter (1986)	-
<i>Sepsophis punctatus</i> Beddome, 1870	<i>Sepsophis punctatus</i>	<i>Sepsophis punctatus</i>	-	-
<i>Lygosoma courcyanum</i> Annandale, 1912	<i>Lygosoma courcyanum</i>	<i>Sphenomorphus courcyanum</i>	-	-
<i>Lygosoma Dussumieri</i> Duméril & Bibron, 1839	<i>Lygosoma dussumieri</i>	<i>Sphenomorphus dussumieri</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Hinulia Indica</i> Gray, 1853	<i>Lygosoma indicum indicum</i>	<i>Sphenomorphus indicus</i>	-	-
<i>Lissonota maculata</i> Blyth, 1853	<i>Lygosoma maculatum</i>	<i>Sphenomorphus maculatus</i>	-	-
<i>Tropidophorus assamensis</i> Annandale, 1912	<i>Tropidophorus assamensis</i>	<i>Tropidophorus assamensis</i>	-	-
UROMASTYCIDAE				
<i>U. (=Uromastyx) Hardwickii</i> Gray in: Hardwicke & Gray, 1827	<i>Uromastix hardwickii</i>	<i>Uromastyx hardwickii</i>	-	Allocated by Smith (1935: 244) to the Agamidae
VARANIDAE				
<i>Tupinambis bengalensis</i> Daudin, 1802	<i>Varanus monitor</i>	<i>Varanus bengalensis</i>	Mertens (1946); Sprackland (1982)	-
<i>M. (= Monitor) flavescens</i> Hardwicke & Gray, 1827	<i>Varanus flavescens</i>	<i>Varanus flavescens</i>	-	-
<i>Tupinambis griseus</i> Daudin, 1803	<i>Varanus griseus</i>	<i>Varanus griseus</i>	-	-
<i>Stellio salvator</i> Laurenti, 1768	<i>Varanus salvator</i>	<i>Varanus salvator</i>	-	-
ACROCHORDIDAE				
<i>Hydrus Granulatus</i> Schneider, 1799	<i>Acrochordus granulatus</i>	<i>Acrochordus granulatus</i>	-	-
BOIDAE				
<i>Boa Conica</i> Schneider, 1801	<i>Eryx conicus</i>	<i>Eryx conicus</i>	-	-
<i>Boa Johnii</i> Russell, 1801	<i>Eryx johni</i>	<i>Eryx johnii</i>	-	-
<i>Eryx whitakeri</i> Das, 1991	-	<i>Eryx whitakeri</i>	-	-
<i>Coluber Molurus</i> Linnaeus, 1758	<i>Python molurus</i>	<i>Python molurus</i>	-	-
<i>Boa Reticulata</i> Schneider, 1801	<i>Python reticulatus</i>	<i>Python reticulatus</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
COLUBRIDAE				
<i>Tragops dispar</i> Günther, 1864	<i>Dryophis dispar</i>	<i>Ahaetulla dispar</i>	-	-
<i>Dryophis fronticinctus</i> Günther, 1858	<i>Dryophis fronticinctus</i>	<i>Ahaetulla fronticincta</i>	-	-
<i>Coluber nasuta</i> Lacepède, 1789	<i>Dryophis nasutus</i>	<i>Ahaetulla nasuta</i>	-	-
<i>Psammophis Perroteti</i> Duméril, Bibron & Duméril, 1854	<i>Dryophis perroteti</i>	<i>Ahaetulla perroteti</i>	-	-
<i>Dryophis prasina</i> Boie, 1827	<i>Dryophis prasinus</i>	<i>Ahaetulla prasina</i>	-	-
<i>Dryinus pulverulentus</i> Duméril, Bibron & Duméril, 1854	<i>Dryophis pulverulentus</i>	<i>Ahaetulla pulverulenta</i>	-	-
<i>Tropidonotus beddomii</i> Günther, 1864	<i>Natrix beddomei</i>	<i>Amphiesma beddomii</i>	Malnate (1960)	-
<i>Tropidonotus khasiensis</i> Boulenger, 1890	<i>Natrix khasiensis</i>	<i>Amphiesma khasiense</i>	Malnate (1960)	-
<i>Tropidonotus modestus</i> Günther, 1875	<i>Natrix modesta</i>	<i>Amphiesma modestum</i>	Malnate (1960)	-
<i>Tropidonotus monticolus</i> Jerdon, 1853	<i>Natrix monticola</i>	<i>Amphiesma monticola</i>	Malnate (1960)	-
<i>Tropidonotus nicobarensis</i> Sclater, 1891	<i>Natrix nicobarensis</i>	<i>Amphiesma nicobarense</i>	Malnate (1960)	-
<i>Tropidonotus parallelus</i> Boulenger, 1890	<i>Natrix parallela</i>	<i>Amphiesma parallelum</i>	Malnate (1960)	-
<i>Tropidonotus pealii</i> Sclater, 1891	<i>Natrix peali</i>	<i>Amphiesma pealii</i>	Malnate (1960)	-
<i>Tropidonotus platyceps</i> Blyth, 1854	<i>Natrix platyceps</i>	<i>Amphiesma platyceps</i>	Malnate (1960)	-
<i>Herpetoreas sieboldii</i> Günther, 1860	<i>Natrix platyceps</i>	<i>Amphiesma sieboldii</i>	Malnate (1960); also, Malnate (1966)	-
<i>Coluber stolatus</i> Linnaeus, 1758	<i>Natrix stolata</i>	<i>Amphiesma stolatum</i>	Malnate (1960)	-
<i>Tropidonotus venningi</i> Wall, 1910	<i>Natrix venningi</i>	<i>Amphiesma venningi</i>	Malnate (1960)	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Tropidonotus xenura</i> Wall, 1907	<i>Natrix xenura</i>	<i>Amphiesma xenura</i>	Malnate (1960)	-
<i>Coluber Fasciolatus</i> Shaw, 1802	<i>Coluber fasciolatus</i>	<i>Argyrogena fasciolata</i>	Wilson (1967)	-
<i>Coluber schistosus</i> Daudin, 1803	<i>Atretium schistosum</i>	<i>Atretium schistosum</i>	-	-
<i>Calamaria reticulata</i> Blyth, 1854	<i>Blythia reticulata</i>	<i>Blythia reticulata</i>	-	-
<i>Dipsas andamanensis</i> Wall, 1909	<i>Boiga ceylonensis andamanensis</i>	<i>Boiga andamanensis</i>	-	-
<i>Dipsas beddomei</i> Wall, 1909	<i>Boiga ceylonensis beddomei</i>	<i>Boiga beddomei</i>	-	-
<i>Dipsadomorphus ceylonensis</i> Günther, 1858	<i>Boiga ceylonensis ceylonensis</i>	<i>Boiga ceylonensis</i>	-	-
<i>Triglyphodon Cyaneum</i> Duméril, Bibron & Duméril, 1854	<i>Boiga cyanea</i>	<i>Boiga cyanea</i>	-	-
<i>Dipsas dightoni</i> Boulenger, 1894	<i>Boiga dightoni</i>	<i>Boiga dightoni</i>	-	-
<i>Triglyphodon Forsteni</i> Duméril, Bibron & Duméril, 1854	<i>Boiga forsteni</i>	<i>Boiga forsteni</i>	-	-
<i>Dipsas gokool</i> Gray, 1835	<i>Boiga gokool</i>	<i>Boiga gokool</i>	-	-
<i>Dipsas multifasciata</i> Blyth, "1860" 1861	<i>Boiga multifasciata</i>	<i>Boiga multifasciata</i>	-	-
<i>Dipsas multomaculata</i> Boie, 1827	<i>Boiga multumaculata</i>	<i>Boiga multomaculata</i>	-	-
<i>Dipsas nuchalis</i> Günther, 1875	<i>Boiga ceylonensis nuchalis</i>	<i>Boiga nuchalis</i>	-	-
<i>Boiga ocellata</i> Kroon, 1973	-	<i>Boiga ocellata</i>	-	Smith's (1943: 357-358) concept of <i>B. cynodon</i> was a composite of this nominal species and <i>B. ocellata</i> Kroon, 1973
<i>Dipsas ochraceus</i> Günther, 1868	<i>Boiga ochracea</i>	<i>Boiga ochraceus</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Dipsadomorphus quinquunciatus</i> Wall, 1908	<i>Boiga quincunciata</i>	<i>Boiga quincunciata</i>	-	-
<i>Coluber trigonatus</i> Schneider in: Bechstein, 1802	<i>Boiga trigonata</i>	<i>Boiga trigonata</i>	-	-
<i>Boiga wallachi</i> Das, 1997	-	<i>Boiga wallachi</i>	-	-
<i>Calamaria pavementata</i> Duméril, Bibron & Duméril, 1854	<i>Calamaria pavementata</i>	<i>Calamaria pavementata</i>	-	-
<i>Coronella violacea</i> Cantor, 1839	<i>Cantoria violacea</i>	<i>Cantoria violacea</i>	-	-
<i>Hydrus Rynchops</i> Schneider, 1799	<i>Cerberus rhynchops</i>	<i>Cerberus rynchops</i>	-	Illegal emendation to <i>rhynchops</i> by Boulenger (1896)
<i>Coluber Ornatus</i> Shaw, 1802	<i>Chrysopelea ornata</i>	<i>Chrysopelea ornata</i>	-	-
<i>Chrysopelea paradisi</i> Boie in: Boie, 1827	<i>Chrysopelea paradisi</i>	<i>Chrysopelea paradisi</i>	-	-
<i>Coluber flavolineata</i> Schlegel, 1827	<i>Elaphe flavolineata</i>	<i>Coelognathus flavolineatus</i>	Helfenberger (2001a, b)	-
<i>Coluber helena</i> Daudin, 1803	<i>Elaphe helena</i>	<i>Coelognathus helena</i>	Helfenberger (2001a, b)	-
<i>Coluber radiatus</i> Schlegel, 1837	<i>Elaphe radiata</i>	<i>Coelognathus radiatus</i>	Helfenberger (2001a, b)	-
<i>Coluber bholanathi</i> Sharma, 1976	-	<i>Coluber bholanathi</i>	-	-
<i>Zamenis gracilis</i> Günther, 1862	<i>Coluber gracilis</i>	<i>Coluber gracilis</i>	-	-
<i>Coluber Ravergieri</i> Ménétériés, 1832	<i>Coluber ravergeri</i>	<i>Coluber ravergeri</i>	-	-
<i>Zamenis ladacensis</i> Anderson, 1871	<i>Coluber rhodorhachis</i>	<i>Coluber ladacensis</i>	Ataev et al. (1994)	-
<i>Coluber ventromaculatus</i> Gray, 1834	<i>Coluber ventromaculatus</i>	<i>Coluber ventromaculatus</i>	-	-
<i>Coluber vittacaudatus</i> Blyth, 1854	-	<i>Coluber vittacaudatus</i>	-	Not included in Smith (1943)

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Zamenis brachyurus</i> Günther, 1866	<i>Coronella brachyura</i>	<i>Coronella brachyura</i>	-	-
<i>Cyclophiops doriae</i> Boulenger, 1888	<i>Opheodrys doriæ</i>	<i>Cyclophiops doriae</i>	Cundall (1981)	-
<i>Dendrophis pictus</i> Variety <i>cyanochloris</i> Wall, 1921	<i>Ahaetulla cyanochloris</i>	<i>Dendrelaphis cyanochloris</i>	International Commission on Zoological Nomenclature (1958); Savage (1952)	-
<i>Dendrophis gorei</i> Wall, 1910	<i>Ahaetulla gorei</i>	<i>Dendrelaphis gorei</i>	-	-
<i>Dendrophis grandoculis</i> Boulenger, 1890	<i>Ahaetulla grandoculis</i>	<i>Dendrelaphis grandoculis</i>	-	-
<i>Dendrelaphis humayuni</i> Tiwari & Biswas, 1973	-	<i>Dendrelaphis humayuni</i>	-	-
<i>Coluber pictus</i> Gmelin, 1789	<i>Ahaetulla ahaetulla</i>	<i>Dendrelaphis pictus</i>	-	-
<i>Dendrophis subocularis</i> Boulenger, 1888	<i>Ahaetulla subocularis</i>	<i>Dendrelaphis subocularis</i>	-	-
<i>Coluber tristis</i> Daudin, 1803	<i>Ahaetulla tristis</i>	<i>Dendrelaphis tristis</i>	-	-
<i>Ophites gammiei</i> Blanford, 1878	<i>Dinodon gammiei</i>	<i>Dinodon gammiei</i>	-	-
<i>Ophites septentrionalis</i> Günther, 1875	<i>Dinodon septentrionalis</i>	<i>Dinodon septentrionalis</i>	-	-
<i>Odontomus gracilis</i> Günther, 1864	<i>Dryocalamus gracilis</i>	<i>Dryocalamus gracilis</i>	-	-
<i>Coluber nympha</i> Daudin, 1803	<i>Dryocalamus nympha</i>	<i>Dryocalamus nympha</i>	-	-
<i>Elachistodon westermanni</i> Reinhardt, 1863	<i>Elachistodon westermanni</i>	<i>Elachistodon westermanni</i>	-	-
<i>Herpetrodryas frenatus</i> Gray, 1853	<i>Elaphe frenata</i>	<i>Elaphe frenata</i>	-	-
<i>Coluber prasinus</i> Blyth, 1854	<i>Elaphe prasina</i>	<i>Elaphe prasina</i>	-	-
<i>Coluber mandarinus</i> Cantor, 1842	<i>Elaphe mandarina</i>	<i>Euprepiophis mandarinus</i>	Utiger et al. (2002)	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Eurostus Dussumierii</i> Duméril, Bibron & Duméril, 1854	<i>Enhydris dussumieri</i>	<i>Enhydris dussumierii</i>	-	-
<i>Hydrus Enhydris</i> Schneider, 1799	<i>Enhydris enhydris</i>	<i>Enhydris enhydris</i>	-	-
<i>Homalopsis sieboldii</i> Schlegel, 1837	<i>Enhydris sieboldi</i>	<i>Enhydris sieboldii</i>	-	-
<i>Homalopsis leucobalia</i> Schlegel, 1837	<i>Fordonia leucobalia</i>	<i>Fordonia leucobalia</i>	-	-
<i>Coluber (Homalopsis) prevostianus</i> Eydoux & Gervais, 1837	<i>Gerardia prevostiana</i>	<i>Gerarda prevostiana</i>	-	-
<i>Ablabes Nicobariensis</i> Stoliczka, 1870	<i>Liopeltis nicobariensis</i>	<i>Gongylosoma nicobariense</i>	Leviton (1964)	-
<i>Coluber Oxycephalus</i> Boie, 1827	<i>Elaphe oxycephala</i>	<i>Gonyosoma oxycephalum</i>	Dowling (1958)	-
<i>Coluber buccatus</i> Linnaeus, 1758	<i>Homalopsis buccata</i>	<i>Homalopsis buccata</i>	-	-
<i>Cyclophis calamaria</i> Günther, 1858	<i>Liopeltis calamaria</i>	<i>Liopeltis calamaria</i>	-	-
<i>Cyclophis frenatus</i> Günther, 1858	<i>Liopeltis frenatus</i>	<i>Liopeltis frenatus</i>	-	-
<i>Ablabes rappii</i> Günther, 1860	<i>Liopeltis rappi</i>	<i>Liopeltis rappii</i>	-	-
<i>Ablabes stoliczkae</i> Sclater, 1891	<i>Liopeltis stoliczkae</i>	<i>Liopeltis stoliczkae</i>	-	-
<i>Coluber aulicus</i> Linnaeus, 1758	<i>Lycodon aulicus</i>	<i>Lycodon aulicus</i>	-	-
<i>Lycodon capucinus</i> Boie, 1827	<i>Lycodon aulicus capucinus</i>	<i>Lycodon capucinus</i>	Arnold (2000); Fritts (1993); Jones (1993)	-
<i>Ophites fasciatus</i> Anderson, "1878" 1879	<i>Lycodon fasciatus</i>	<i>Lycodon fasciatus</i>	-	-
<i>Lycodon flavomaculatus</i> Wall, 1907	<i>Lycodon flavomaculatus</i>	<i>Lycodon flavomaculatus</i>	-	-
<i>Coluber Jara</i> Shaw, 1802	<i>Lycodon jara</i>	<i>Lycodon jara</i>	-	-

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<i>Lycodon laoensis</i> Günther, 1864	<i>Lycodon laoensis</i>	<i>Lycodon laoensis</i>	-	-
<i>Lycodon mackinnoni</i> Wall, 1906	<i>Lycodon mackinnoni</i>	<i>Lycodon mackinnoni</i>	-	-
<i>Coluber Striatus</i> Shaw, 1802	<i>Lycodon striatus</i>	<i>Lycodon striatus</i>	-	-
<i>Lycodon tiwarii</i> Biswas & Sanyal, 1965	-	<i>Lycodon tiwarii</i>	-	-
<i>Cercaspis Travancoricus</i> Beddome, 1870	<i>Lycodon travancoricus</i>	<i>Lycodon travancoricus</i>	-	-
<i>Lycodon zawi</i> Slowinski, Pawar, Win, Thin, Gyi, Oo & Tun, 2001	-	<i>Lycodon zawi</i>	-	-
<i>Tropidonotus plumbicolor</i> Cantor, 1839	<i>Macropisthodon plumbicolor</i>	<i>Macropisthodon plumbicolor</i>	-	-
<i>Oligodon affinis</i> Günther, 1862	<i>Oligodon affinis</i>	<i>Oligodon affinis</i>	-	-
<i>Coronella albocincta</i> Cantor, 1839	<i>Oligodon albocinctus</i>	<i>Oligodon albocinctus</i>	-	-
<i>Coluber Arnensis</i> Shaw, 1802	<i>Oligodon arnensis</i>	<i>Oligodon arnensis</i>	-	-
<i>Oligodon brevicauda</i> Günther, 1862	<i>Oligodon brevicauda</i>	<i>Oligodon brevicauda</i>	-	-
<i>Calamaria catenata</i> Blyth, 1854	<i>Oligodon catenata</i>	<i>Oligodon catenatus</i>	-	-
<i>Simotes cinereus</i> Günther, 1864	<i>Oligodon cinereus</i>	<i>Oligodon cinereus</i>	-	-
<i>Coronella cyclura</i> Cantor, 1839	<i>Oligodon cyclurus</i>	<i>Oligodon cyclurus</i>	-	-
<i>Elaps dorsalis</i> Gray, 1835	<i>Oligodon dorsalis</i>	<i>Oligodon dorsalis</i>	-	-
<i>Simotes albocinctus</i> (variety) <i>dorsolateralis</i> Wall, 1909	<i>Oligodon cyclurus</i>	<i>Oligodon dorsolateralis</i>	-	-
<i>Oligodon erythrogaster</i> Boulenger, 1907	<i>Oligodon erythrogaster</i>	<i>Oligodon erythrogaster</i>	-	-
<i>Oligodon erythrorhachis</i> Wall, 1910	<i>Oligodon erythrorhachis</i>	<i>Oligodon erythrorhachis</i>	-	-

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<i>Simotes juglandifer</i> Wall, 1909	<i>Oligodon juglandifer</i>	<i>Oligodon juglandifer</i>	-	-
<i>Oligodon kheriensis</i> Acharji & Ray, 1936	<i>Oligodon cyclurus</i>	<i>Oligodon kheriensis</i>	Schleich and Kästle (2002)	-
<i>Oligodon melaneus</i> Wall, 1909	<i>Oligodon melaneus</i>	<i>Oligodon melaneus</i>	-	-
<i>Oligodon melazonotus</i> Wall, 1922	<i>Oligodon melazonotus</i>	<i>Oligodon melazonotus</i>	-	-
<i>Oligodon nikhili</i> Whitaker & Dattatri, 1982	-	<i>Oligodon nikhili</i>	-	-
<i>Coronella taeniolata</i> Jerdon, 1853	<i>Oligodon taeniolatus</i>	<i>Oligodon taeniolatus</i>	-	-
<i>Simotes Theobaldi</i> Günther, 1868	<i>Oligodon theobaldi</i>	<i>Oligodon theobaldi</i>	-	-
<i>Oligodon travancoricum</i> Beddome, 1877	<i>Oligodon travancoricus</i>	<i>Oligodon travancoricus</i>	-	-
<i>Xenodon venustum</i> Jerdon, 1853	<i>Oligodon venustus</i>	<i>Oligodon venustus</i>	-	-
<i>Simotes wood-masoni</i> Sclater, 1891	<i>Oligodon woodmasoni</i>	<i>Oligodon woodmasoni</i>	-	-
<i>Coluber porphyracea</i> Cantor, 1839	<i>Elaphe porphyracea</i>	<i>Oreophis porphyraceus</i>	Utiger et al. (2002)	-
<i>Coluber cantoris</i> Boulenger, 1894	<i>Elaphe cantoris</i>	<i>Orthriophis cantoris</i>	Utiger et al. (2002)	-
<i>Spilotes hodgsonii</i> Günther, 1860	<i>Elaphe hodgsoni</i>	<i>Orthriophis hodgsonii</i>	Utiger et al. (2002)	-
<i>Elaphe taeniurus</i> Cope, "1860" 1861	<i>Elaphe tæniura</i>	<i>Orthriophis taeniurus</i>	Utiger et al. (2002)	-
<i>Pareas macularius</i> Blyth in: Theobald, 1868	<i>Pareas macularius</i>	<i>Pareas macularius</i>	-	-
<i>Dipsas monticola</i> Cantor, 1839	<i>Pareas monticola</i>	<i>Pareas monticolus</i>	-	-
<i>Psammophis pulverulenta</i> Boie in: Boie, 1827	<i>Psammodynastes pulverulentus</i>	<i>Psammodynastes pulverulentus</i>	-	-
<i>Coluber Condanarus</i> Merrem, 1820	<i>Psammophis condanarus</i>	<i>Psammophis condanarus</i>	-	-
<i>Psammophis leithii</i> Günther, 1869	<i>Psammophis leithi</i>	<i>Psammophis leithii</i>	-	-

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<i>Psammophis longifrons</i> Boulenger, 1890	<i>Psammophis longifrons</i>	<i>Psammophis longifrons</i>	-	-
<i>Coluber schokari</i> Forskål, 1775	<i>Psammophis schokari</i>	<i>Psammophis schokari</i>	-	-
<i>Tropidonotus macrops</i> Blyth, 1854	<i>Pseudoxenodon macrops</i>	<i>Pseudoxenodon macrops</i>	-	-
<i>Coluber korros</i> Schlegel, 1837	<i>Ptyas korros</i>	<i>Ptyas korros</i>	-	-
<i>Coluber mucosus</i> Linnaeus, 1758	<i>Ptyas mucosus</i>	<i>Ptyas mucosa</i>	David and Das (in press)	-
<i>Coluber nigromarginatus</i> Blyth, 1854	<i>Zaocys nigromarginatus</i>	<i>Ptyas nigromarginata</i>	David and Das (in press)	-
<i>Tropidonotus himalayanus</i> Günther, 1864	<i>Natrix himalayana</i>	<i>Rhabdophis himalayanus</i>	Malnate (1960)	-
<i>Tropidonotus subminiatus</i> Schlegel, 1837	<i>Natrix subminiata</i>	<i>Rhabdophis subminiatus</i>	Malnate (1960)	-
<i>Calamaria bicolor</i> Blyth, 1854	<i>Rhabdops bicolor</i>	<i>Rhabdops bicolor</i>	-	-
<i>Ablabes olivaceus</i> Beddome, 1863	<i>Rhabdops olivaceus</i>	<i>Rhabdops olivaceus</i>	-	-
<i>Ablabes bistrigatus</i> Günther, 1868	<i>Sibynophis bistrigatus</i>	<i>Sibynophis bistrigatus</i>	-	-
<i>Psammophis collaris</i> Gray, 1853	<i>Sibynophis collaris</i>	<i>Sibynophis collaris</i>	-	-
<i>Calamaria sagittaria</i> Cantor, 1839	<i>Sibynophis sagittarius</i>	<i>Sibynophis sagittaria</i>	-	-
<i>Tropidonotus percarinatus</i> Boulenger, 1899	<i>Natrix percarinata</i>	<i>Sinonatrix percarinata</i>	Rossmann and Eberle (1977)	-
<i>Zamenis arenarius</i> Boulenger, 1890	<i>Coluber arenarius</i>	<i>Spalerosophis arenarius</i>	Marx (1959)	-
<i>Zamenis diadema</i> var. <i>atriceps</i> Fischer, 1885	<i>Coluber diadema</i>	<i>Spalerosophis atriceps</i>	-	-
<i>Coluber diadema</i> Schlegel, 1837	<i>Coluber diadema</i>	<i>Spalerosophis diadema</i>	Marx (1959)	-
<i>Stoliczka khasiensis</i> Jerdon, 1870	<i>Stoliczkaia khasiensis</i>	<i>Stoliczka khasiensis</i>	-	-
<i>Calamaria fusca</i> Blyth, 1854	<i>Trachischium fuscum</i>	<i>Trachischium fuscum</i>		

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Trachischium guentheri</i> Boulenger, 1890	<i>Trachischium guentheri</i>	<i>Trachischium guentheri</i>	-	-
<i>Trachischium laeve</i> Peracca, 1904	<i>Trachischium laeve</i>	<i>Trachischium leave</i>	-	-
<i>Calamaria monticola</i> Cantor, 1839	<i>Trachischium monticola</i>	<i>Trachischium monticola</i>	-	-
<i>Calamaria tenuiceps</i> Blyth, 1854	<i>Trachischium tenuiceps</i>	<i>Trachischium tenuiceps</i>	-	-
<i>Psammophis cerasogaster</i> Cantor, 1839	<i>Xenochrophis cerasogaster</i>	<i>Xenochrophis cerasogaster</i>	-	-
<i>Amphiesma flavipunctatum</i> Hallowell, 1860	<i>Natrix piscator flavipunctata</i>	<i>Xenochrophis flavipunctatus</i>	Taylor (1965)	-
<i>Coluber melanzostus</i> Gravenhorst, 1807	<i>Natrix piscator melanzostus</i>	<i>Xenochrophis melanzostus</i>	Malnate and Underwood (1988)	-
<i>Hydrus Piscator</i> Schneider, 1799	<i>Natrix piscator</i>	<i>Xenochrophis piscator</i>	Malnate and Underwood (1988)	-
<i>Tropidonotus punctulatus</i> Günther, 1858	<i>Natrix punctulata</i>	<i>Xenochrophis punctulatus</i>	Malnate and Underwood (1988)	-
<i>Tropidonotus sancti-johannis</i> Boulenger, 1890	<i>Natrix piscator</i>	<i>Xenochrophis sanctijohannis</i>	Khan (1984a)	-
<i>Tropidonotus Trianguligerus</i> Boie, 1827	<i>Natrix trianguligera</i>	<i>Xenochropis trianguligerus</i>	Malnate and Underwood (1988)	-
<i>Platypteryx Perroteti</i> Duméril, Bibron & Duméril, 1854	<i>Xylophis perroteti</i>	<i>Xylophis perroteti</i>	-	-
<i>Geophis stenorhynchus</i> Günther, 1875	<i>Xylophis stenorhynchus</i>	<i>Xylophis stenorhynchus</i>	-	-
ELAPIDAE <i>Bungarus andamanensis</i> Biswas & Sanyal, 1978	-	<i>Bungarus andamanensis</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Elaps bungaroides</i> Cantor, 1839	<i>Bungarus bungaroides</i>	<i>Bungarus bungaroides</i>	-	-
<i>Pseudoboa Caerulea</i> Schneider, 1801	<i>Bungarus caeruleus</i>	<i>Bungarus caeruleus</i>	-	-
<i>Pseudoboa Fasciata</i> Schneider, 1801	<i>Bungarus fasciatus</i>	<i>Bungarus fasciatus</i>	-	-
<i>Bungarus lividus</i> Cantor, 1839	<i>Bungarus lividus</i>	<i>Bungarus lividus</i>	-	-
<i>Bungarus niger</i> Wall, 1909	<i>Bungarus niger</i>	<i>Bungarus niger</i>	-	-
<i>Bungarus sindanus</i> Boulenger, 1897	<i>Bungarus walli</i>	<i>Bungarus sindanus</i>	Khan (1984b)	-
<i>Callophis beddomei</i> Smith, 1943	<i>Callophis beddomei</i>	<i>Calliophis beddomei</i>	-	-
<i>Elaps Bibroni</i> Jan, 1858	<i>Callophis bibroni</i>	<i>Calliophis bibroni</i>	-	-
<i>Coluber Melanurus</i> Shaw, 1802	<i>Callophis melanurus</i>	<i>Calliophis melanurus</i>	-	-
<i>Callophis nigrescens</i> Günther, 1862	<i>Callophis nigrescens</i>	<i>Calliophis nigrescens</i>	-	-
<i>Naja kaouthia</i> Lesson, 1831	<i>Naja naja kaouthia</i>	<i>Naja kaouthia</i>	Wüster (1998a); Wüster and Thorpe (1992)	-
<i>Coluber naja</i> Linnaeus, 1758	<i>Naja naja naja</i>	<i>Naja naja</i>	Wüster (1998a); Wüster and Thorpe (1992)	-
<i>Tomyris oxiana</i> Eichwald, 1831	<i>Naja naja oxiana</i>	<i>Naja oxiana</i>	Wüster (1998a); Wüster and Thorpe (1992)	-
<i>Naja tripudians</i> var. <i>sagittifera</i> Wall, 1913	<i>Naja naja kaouthia</i>	<i>Naja sagittifera</i>	Wüster (1998a)	-
<i>Hamadryas hannah</i> Cantor, 1836	<i>Naja hannah</i>	<i>Ophiophagus hannah</i>	Bogert (1945)	-
<i>Elaps Macclellandi</i> Reinhardt, 1844	<i>Callophis macclellandi</i>	<i>Sinomicrurus macclellandi</i>	Slowinski et al. (2001a)	-
HYDROPHIIDAE				
<i>Hydrus Stokesii</i> Gray in: Stokes, 1846	<i>Astrotia stokesi</i>	<i>Astrotia stokesii</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Hydrophis schistosus</i> Daudin, 1803	<i>Enhydrina schistose</i>	<i>Enhydrina schistosa</i>	-	-
<i>Hydrus Caerulescens</i> Shaw, 1802	<i>Hydrophis</i> <i>cærulescens</i>	<i>Hydrophis</i> <i>caerulescens</i>	-	-
<i>Hydrophis cantoris</i> Günther, 1864	<i>Microcephalophis</i> <i>cantoris</i>	<i>Hydrophis</i> <i>cantoris</i>	Rasmussen (1996)	-
<i>Hydrophis cyanocinctus</i> Daudin, 1803	<i>Hydrophis</i> <i>cyanocinctus</i>	<i>Hydrophis</i> <i>cyanocinctus</i>	-	-
<i>Hydrus Fasciatus</i> Schneider, 1799	<i>Hydrophis fasciatus</i>	<i>Hydrophis fasciatus</i>	-	-
<i>Hydrus Gracilis</i> Shaw, 1802	<i>Microcephalophis</i> <i>gracilis</i>	<i>Hydrophis</i> <i>gracilis</i>	Rasmussen (1996)	-
<i>Aturia Lapemoides</i> Gray, 1849	<i>Hydrophis</i> <i>lapemoides</i>	<i>Hydrophis</i> <i>lapemoides</i>	-	-
<i>Anguis mamillaris</i> Daudin, 1803	<i>Hydrophis</i> <i>mamillaris</i>	<i>Hydrophis</i> <i>mamillaris</i>	-	-
<i>Hydrophis nigrocinctus</i> Daudin, 1803	<i>Hydrophis</i> <i>nigrocinctus</i>	<i>Hydrophis</i> <i>nigrocinctus</i>	-	-
<i>Hydrophis obscurus</i> Daudin, 1803	<i>Hydrophis</i> <i>obscurus</i>	<i>Hydrophis</i> <i>obscurus</i>	-	-
<i>Pelamis ornata</i> Gray, 1842	<i>Hydrophis ornatus</i>	<i>Hydrophis ornatus</i>	-	-
<i>Hydrus Spiralis</i> Shaw, 1802	<i>Hydrophis spiralis</i>	<i>Hydrophis spiralis</i>	-	-
<i>Hydrophis stricticollis</i> Günther, 1864	<i>Hydrophis</i> <i>stricticollis</i>	<i>Hydrophis</i> <i>stricticollis</i>	-	-
<i>Kerilia Jerdonii</i> Gray, 1849	<i>Kerilia jerdoni</i>	<i>Kerilia jerdonii</i>	-	-
<i>Lapemis hardwickii</i> Gray, 1834	<i>Lapemis hardwickii</i>	<i>Lapemis curtus</i>	Gritis and Voris (1990)	-
<i>Hydrus Curtus</i> Shaw, 1802	<i>Lapemis curtus</i>	<i>Lapemis curtus</i>	-	-
<i>Hydrus Colubrinus</i> Schneider, 1799	<i>Laticauda colubrina</i>	<i>Laticauda colubrina</i>	-	-
<i>Coluber laticaudata</i> Linnaeus, 1758	<i>Laticauda</i> <i>laticaudata</i>	<i>Laticauda</i> <i>laticaudata</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Anguis platara</i> Linnaeus, 1766	<i>Pelamis platurus</i>	<i>Pelamis platurus</i>	-	-
<i>Thalassophis viperina</i> Schmidt, 1852	<i>Praescutata viperina</i>	<i>Praescutata viperina</i>	-	-
LEPTOTYPHLOPIDAE				
<i>Glaucania blanfordii</i> Boulenger, 1890	<i>Leptotyphlops blanfordi</i>	<i>Leptotyphlops blanfordii</i>	-	-
<i>Stenostoma macrorhynchum</i> Jan in: Jan & Sordelli, 1860	<i>Leptotyphlops macrorhynchus</i>	<i>Leptotyphlops macrorhynchus</i>	-	-
TYPHLOPIDAE				
<i>Eryx braminus</i> Daudin, 1803	<i>Typhlops braminus</i>	<i>Ramphotyphlops braminus</i>	Robb (1966)	-
<i>Onychocephalus acutus</i> Duméril, Bibron & Duméril, 1844	<i>Typhlops acutus</i>	<i>Rhinotyphlops acutus</i>	Wallach (1994)	-
<i>Typhlops andamanensis</i> Stoliczka, 1871	<i>Typhlops andamanensis</i>	<i>Typhlops andamanensis</i>	-	-
<i>Typhlops beddomei</i> Boulenger, 1890	<i>Typhlops beddomei</i>	<i>Typhlops beddomei</i>	-	-
<i>Typhlops bothriorhynchus</i> Günther, 1864	<i>Typhlops bothriorhynchus</i>	<i>Typhlops bothriorhynchus</i>	-	-
<i>Typhlops Diardii</i> Schlegel, 1839	<i>Typhlops diardi diardi</i>	<i>Typhlops diardii</i>	-	-
<i>Typhlops exiguus</i> Jan in: Jan & Sordelli, 1864	-	<i>Typhlops exiguus</i>	Not included in Smith (1943)	-
<i>Typhlops jerdoni</i> Boulenger, 1890	<i>Typhlops jerdoni</i>	<i>Typhlops jerdoni</i>	-	-
<i>Typhlops loveridgei</i> Constable, 1949	-	<i>Typhlops loveridgei</i>	-	-
<i>Typhlops meszoelyi</i> Wallach, 1999	-	<i>Typhlops meszoelyi</i>	-	-
<i>Typhlops Mülleri</i> Schlegel, 1839	<i>Typhlops diardi muelleri</i>	<i>Typhlops muelleri</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Typhlops oatesi</i> Boulenger, 1890	<i>Typhlops oatesi</i>	<i>Typhlops oatesi</i>	-	-
<i>Typhlops oligolepis</i> Wall, 1909	<i>Typhlops oligolepis</i>	<i>Typhlops oligolepis</i>	-	-
<i>Typhlops tenuis</i> Günther, 1864	<i>Typhlops psammeces</i>	<i>Typhlops pammeces</i>	-	<i>pammeces</i> is apparently a typographical error for <i>psammeces</i> ; unjustified emendation by Smith (1943: 48)
<i>Typhlops porrectus</i> Stoliczka, 1871	<i>Typhlops porrectus</i>	<i>Typhlops porrectus</i>	-	-
<i>Onychocephalus</i> (<i>Ophthalmidion</i>) <i>tenuicollis</i> Peters, 1864	<i>Typhlops tenuicollis</i>	<i>Typhlops tenuicollis</i>	-	-
<i>Typhlops thurstoni</i> Boettger, 1890	<i>Typhlops thurstoni</i>	<i>Typhlops thurstoni</i>	-	-
<i>Typhlops tindalli</i> Smith, 1943	<i>Typhlops tindalli</i>	<i>Typhlops tindalli</i>	-	-
UROPELTIDAE				
<i>Brachyophidium rhodogaster</i> Wall, 1921	<i>Teretrurus rhodogaster</i>	<i>Brachyophidium rhodogaster</i>	Gans (1966)	-
<i>Melanophidium bilineatum</i> Beddome, 1870	<i>Melanophidium bilineatum</i>	<i>Melanophidium bilineatum</i>	-	-
<i>Melanophidium punctatum</i> Beddome, 1871	<i>Melanophidium punctatum</i>	<i>Melanophidium punctatum</i>	-	-
<i>Plectrurus wynaudensis</i> Beddome, 1863	<i>Melanophidium wynaudense</i>	<i>Melanophidium wynaudensis</i>	-	-
<i>Platyplectrurus madurensis</i> Beddome, 1877	<i>Platyplectrurus madurensis</i>	<i>Platyplectrurus madurensis</i>	-	-
<i>Plectrurus?</i> <i>trilineatus</i> Beddome, 1867	<i>Platyplectrurus trilineatus</i>	<i>Platyplectrurus trilineatus</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Plectrurus aureus</i> Beddome, 1880	<i>Plectrurus aureus</i>	<i>Plectrurus aureus</i>	-	-
<i>Silybura Canarica</i> Beddome, 1870	<i>Plectrurus canaricus</i>	<i>Plectrurus canaricus</i>	-	-
<i>Plectrurus g�ntheri</i> Beddome, 1863	<i>Plectrurus guentheri</i>	<i>Plectrurus guentheri</i>	-	-
<i>Plectrurus perroteti</i> Dum�ril, Bibron & Dum�ril, 1854	<i>Plectrurus perroteti</i>	<i>Plectrurus perroteti</i>	-	-
<i>Rhinophis fergusonianus</i> Boulenger, 1896	<i>Rhinophis fergusonianus</i>	<i>Rhinophis fergusonianus</i>	-	-
<i>Typhlops oxyrynchus</i> Schneider, 1801	<i>Rhinophis oxyrynchus</i>	<i>Rhinophis oxyrynchus</i>	-	-
<i>Rhinophis sanguineus</i> Beddome, 1863	<i>Rhinophis sanguineus</i>	<i>Rhinophis sanguineus</i>	-	-
<i>Rhinophis travancoricus</i> Boulenger, 1892	<i>Rhinophis travancoricus</i>	<i>Rhinophis travancoricus</i>	-	-
<i>Plectrurus sanguineus</i> Beddome, 1867	<i>Teretrurus sanguineus</i>	<i>Teretrurus sanguineus</i>	-	-
<i>Silybura arcticeps</i> G�nther, 1875	<i>Uropeltis arcticeps</i>	<i>Uropeltis arcticeps</i>	-	-
<i>Silybura Beddomii</i> G�nther, 1862	<i>Uropeltis beddomei</i>	<i>Uropeltis beddomii</i>	-	-
<i>Silybura broughami</i> Beddome, 1878	<i>Uropeltis broughami</i>	<i>Uropeltis broughami</i>	-	-
<i>Uropeltis ceylanicus</i> Cuvier, 1829	<i>Uropeltis ceylanicus</i>	<i>Uropeltis ceylanicus</i>	-	-
<i>Silybura dindigalensis</i> Beddome, 1877	<i>Uropeltis dindigalensis</i>	<i>Uropeltis dindigalensis</i>	-	-
<i>Siloboura Elliotti</i> Gray, 1858	<i>Uropeltis ellioti</i>	<i>Uropeltis ellioti</i>	-	-
<i>Silybura liura</i> G�nther, 1875	<i>Uropeltis liura</i>	<i>Uropeltis liura</i>	-	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Sibyura macrolepis</i> Peters, 1861	<i>Uropeltis macrolepis</i>	<i>Uropeltis macrolepis</i>	-	-
<i>Silybura macrorhyncha</i> Beddome, 1877	<i>Uropeltis macrorhynchus</i>	<i>Uropeltis macrorhynchus</i>	-	-
<i>Silybura maculata</i> Beddome, 1878	<i>Uropeltis maculatus</i>	<i>Uropeltis maculatus</i>	-	-
<i>Silybura nilgherriensis</i> var. <i>myhendrae</i> Beddome, 1886	<i>Uropeltis myhendrae</i>	<i>Uropeltis myhendrae</i>	-	-
<i>Silybura nitida</i> Beddome, 1878	<i>Uropeltis nitidus</i>	<i>Uropeltis nitidus</i>	-	-
<i>Silybura ocellata</i> Beddome, 1863	<i>Uropeltis ocellatus</i>	<i>Uropeltis ocellatus</i>	-	-
<i>Silybura Petersi</i> Beddome, 1878	<i>Uropeltis petersi</i>	<i>Uropeltis petersi</i>	-	-
<i>Silybura Phipsonii</i> Mason, 1888	<i>Uropeltis phipsoni</i>	<i>Uropeltis phipsonii</i>	-	-
<i>Plectrurus Pulneyensis</i> Beddome, 1863	<i>Uropeltis pulneyensis</i>	<i>Uropeltis pulneyensis</i>	-	-
<i>Silybura rubrolineata</i> Günther, 1875	<i>Uropeltis rubrolineatus</i>	<i>Uropeltis rubrolineatus</i>	-	-
<i>Silybura rubro-maculata</i> Beddome, 1867	<i>Uropeltis rubromaculatus</i>	<i>Uropeltis rubromaculatus</i>	-	-
<i>Uropeltis smithi</i> Gans, 1966	<i>Uropeltis grandis</i>	<i>Uropeltis smithi</i>	Gans (1966)	Replacement name for <i>Rhinophis grandis</i> Beddome, 1867
<i>Silybura Wood-Masoni</i> Theobald, 1876	<i>Uropeltis wood-masoni</i>	<i>Uropeltis woodmasoni</i>	-	-
VIPERIDAE <i>Coluber Russelii</i> Shaw & Nodder, 1797	<i>Vipera russelli</i>	<i>Daboia russelii</i>	Adler et al. (2000); Dowling (1993); Hermann et al. (1992); Wüster (1998a); Wüster (1998b)	-

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Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Pseudoboa</i> <i>Carinatus</i> Schneider, 1801	<i>Echis carinatus</i>	<i>Echis carinatus</i>	-	-
<i>Halys himalayanus</i> Günther, 1864	<i>Ancistrodon himalayanus</i>	<i>Gloydius himalayanus</i>	Hoge and Romano-Hoge (1981)	-
<i>Cophias Hypnale</i> Merrem, 1820	<i>Ancistrodon hypnale</i>	<i>Hypnale hypnale</i>	Gloyd (1977)	-
<i>Coluber Lebetinus</i> Linnaeus, 1758	<i>Vipera lebetina</i>	<i>Macrovipera lebetina</i>	Hermann et al. (1992)	-
<i>Trimeresurus monticola</i> Günther, 1864	<i>Trimeresurus monticola</i>	<i>Ovophis monticola</i>	Burger in: Hoge and Romano-Hoge (1981)	-
<i>Trimeresurus jerdonii</i> Günther, 1875	<i>Trimeresurus jerdoni</i>	<i>Protobothrops jerdonii</i>	Hoge and Romano-Hoge (1983); Kraus et al. (1996); Vidal et al. (1999); Parkinson (1999)	-
<i>Trigonocephalus mucrosquamatus</i> Cantor, 1839	<i>Trimeresurus mucrosquamatus</i>	<i>Protobothrops mucrosquamatus</i>	Hoge and Romano-Hoge (1983); Kraus et al. (1996); Vidal et al. (1999); Parkinson (1999)	-
<i>Trimeresurus strigatus</i> Gray, 1842	<i>Trimeresurus strigatus</i>	<i>Protobothrops strigatus</i>	Hoge and Romano-Hoge (1983); Kraus et al. (1996); Vidal et al. (1999); Parkinson (1999)	-
<i>Trimeresurus albolabris</i> Gray, 1842	<i>Trimeresurus albolabris</i>	<i>Trimeresurus albolabris</i>	-	-
<i>Trimeresurus andersoni</i> Theobald, 1868	<i>Trimeresurus purpureomaculatus andersoni</i>	<i>Trimeresurus andersoni</i>	Malhotra and Thorpe (1996); Wüster et al. (1998)	-

Table 1: Synopsis of names of reptile species known from India. Nomenclature in M.A. Smith's *Fauna* compared with that followed at present. For original names, the original orthography has been retained (including upper case first letters for species nomen, accents, etc.) (*contd.*)

Original name	Name in Smith's Fauna	Current name	References	Remarks
<i>Trigonocephalus Cantori</i> Blyth, 1846	<i>Trimeresurus cantori</i>	<i>Trimeresurus cantori</i>	-	-
<i>Trigonocephalus erythrurus</i> Cantor, 1839	<i>Trimeresurus erythrurus</i>	<i>Trimeresurus erythrurus</i>	-	-
<i>Coluber Gramineus</i> Shaw, 1802	<i>Trimeresurus gramineus</i>	<i>Trimeresurus gramineus</i>	-	-
<i>Trimeresurus labialis</i> Steindachner, 1867	<i>Trimeresurus labialis</i>	<i>Trimeresurus labialis</i>	-	-
<i>Trimeresurus macrolepis</i> Beddome, 1862	<i>Trimeresurus macrolepis</i>	<i>Trimeresurus macrolepis</i>	-	-
<i>Trigonocephalus (Cophias) malabaricus</i> Jerdon, 1853	<i>Trimeresurus malabaricus</i>	<i>Trimeresurus malabaricus</i>	-	-
<i>Trimeresurus medoensis</i> Djao in: Djao & Jiang, 1977	-	<i>Trimeresurus medoensis</i>		Recorded from India by David <i>et al.</i> (2001)
<i>Trimeresurus popeiorum</i> Smith, 1937	<i>Trimeresurus popeorum</i>	<i>Trimeresurus popeiorum</i>	-	-
<i>Trimeresurus gumprechtii</i> David, Vogel, Pauwels & Vidal, 2002	<i>Trimeresurus stejnegeri</i>	<i>Trimeresurus gumprechtii</i>	David <i>et al.</i> (2002)	Known from India (P. David, pers. comm. 2003); and northeastern Thailand (David <i>et al.</i> 2002)
<i>Trimeresurus yunnanensis</i> Schmidt, 1925	<i>Trimeresurus stejnegeri</i>	<i>Trimeresurus yunnanensis</i>	Zhao (1995); David and Ineich (1999); David <i>et al.</i> (2001)	-
<i>Trimeresurus huttoni</i> Smith, 1949	-	<i>Tropidolaemus huttoni</i>	David and Vogel (1997)	-
XENOPELTIDAE				
<i>Xenopeltis unicolor</i> Boie, 1827	<i>Xenopeltis unicolor</i>	<i>Xenopeltis unicolor</i>	-	-

THE FUTURE

“What is the aim of knowledge? What is the purpose of seeking to understand the natural world? Why do we strive continuously to deepen our knowledge of nature?”

(L. Pyenson and S. Sheets-Pyenson, 1999: 381)

“It is time to know, because soon it will be too late to learn.”

(C. Bowden, 1991: 7)

In this era of biodiversity crisis, and especially in the aftermath of the Rio de Janeiro Convention on Biodiversity in 1992, the role of natural museums has become one of unusual importance (Alberch 1993, Butler and Macilwain 1998). It is therefore ironic that now, more than at any other time in their history, natural history museums are suffering the real danger of altogether ceasing to exist, or at least, radically changing their roles of promoting biodiversity research and acquisition of knowledge of biodiversity to being mere places of public entertainment. The gradual change seen is the replacement of biological specimen exhibits with interactive displays or screening of films on esoteric scientific topics that do not always accurately reflect the work that a research museum should be doing. A few famous old regional museums in India (such as the Madras Government Museum) as well as in countries of southeast Asia (Sarawak Museum, Kuching and the Raffles Museum, Singapore) have altogether changed focus, to concentrate on ethnography and archaeology.

On paper, several organisations in India would qualify as a systematic institution, in promoting research on biodiversity and associated topics. Ng (2000) listed key attributes of a well-run contemporary natural history museum, which include:

- modern storage facilities for specimens
- well-identified collections
- a professional curatorial staff
- a programme of specimen acquisition

- accessibility of the collection to visitors, especially specialists
- research publications
- library of scientific literature
- database linking the specimens
- networking with other institutions and organisations
- public education policies

The Zoological Survey of India is easily the most important systematic institution in the country, in terms of the size of their collection, including numbers of types, the presence of other historical specimens in its care, the large number of scientists and technical staff hired for biodiversity research and the scientific publications produced by them. Other institutions include the Bombay Natural History Society, and, to a lesser extent, the National Museum of Natural History, New Delhi. There also exists hundreds of universities, colleges, schools and provincial museums spread all over the country that contain zoological collections, comprising specimens acquired through donations by the staff and students, but few would qualify as a systematic institution such as those run with the criteria listed above. Well-run systematic institutions are of great importance, from being institutions to lodge zoological types and other important voucher specimens, to guiding and leading inventories of biodiversity by competent staff of such institutions, and eventually, dissemination of the results in scholarly publications and public education through exhibitions and popular publications. Museums should also be willing to loan specimens to bonafide specialists for identification and study. Surely, no institution in India (or indeed anywhere in the world) has specialists for all groups of organisms, leading to the accumulation of unidentified or erroneously identified specimens, resulting in a poorly known fauna.

Two recently published books showcase the reptile fauna of India — those of Daniel (2002) and Das (2002). Neither are comprehensive, but

cover representative taxa, and in many ways, highlight the inadequacy of knowledge of the fauna. Reptiles (and amphibians) in general, receive the short shrift in research funding, despite a review showing that studies of ectothermic vertebrates are framed more conceptually than those on endothermic ones (Bonnet *et al.* 2002).

An important factor that makes it necessary to view the acquisition of knowledge on the systematics of Indian reptiles with great urgency, is the loss of forest cover which is directly linked with threats to her biodiversity, as India struggles to feed and house its over one billion human inhabitants. On the other hand, the science of systematics itself is struggling to stay alive, in the face of growing competition for scant (usually State-funded) resources, and institutions are in search of justifications for their existence. Few countries, far fewer in the Third World, have government-supported systematic institutions (such as India's own Zoological Survey of India). Nonetheless, this once premier organisation, leading systematic research in the zoological sciences, faces the real threat of falling into decay through reduced support and morale, given the vagaries of government priorities (that are moving from supporting basic research to more applied ones, presumably with the hopes of quick economic gains). Several groups of organisms in India have never been monographed, and some recently published works are of dubious quality at best (see review in Das 1999). Systematic collections are international repositories of biodiversity information, yet continue to be treated as old-fashioned houses of public amusement and therefore deemed not deserving of state support. Systematic research in India is also compartmentalised, and kept discrete from ecology, genetics, physiology, behaviour and other branches of the natural sciences. How many times have we been asked, "So, are you a taxonomist or an ecologist?" Certainly, synergy between different subdisciplines in the life sciences would benefit all (see, for instance,

Brooke *et al.* 1995, Harvey and Purvis 1991). In an address to the Flora Malesiana Symposium, Stevens (1989) wryly commented that while taxonomic intuition is of great importance, an understanding of function and ecology is also central to classification. Indeed, globally, many natural history museums themselves have unfortunately moved away from basic scientific research, and specimen acquisition, cataloguing and display, to trying to answer other 'Big Questions.' Attempts to make taxonomy more 'relevant' to the rest of biology, as though taxonomy has no right to exist as a separate discipline, have weakened the rest of biology as a whole (Erzinçlioglu 1993). A few museums have such an excess of administrators that the basic work of specimen identification cannot be done!

Another major aspect potential researchers have to deal with is collection and export permits. Collection of biological specimens, and their subsequent export, are now regulated by a variety of governmental agencies, and valid permits for undertaking collecting activities in nearly every country in the world are now mandatory (see, for instance, Duellman 1999). Within India, the Indian Wildlife (Protection) Act of 1972 provides the legal basis for the protection of wild species of flora and fauna. This Act has seen several emendments, and lists a large number of herpetological taxa. Legislation also exists to monitor movement of biological specimens across boundaries (e.g. the Convention in International Trade in Endangered Species in Wild Fauna and Flora, acronym: CITES) and even importation into a second country (e.g. the U.S. Endangered Species Listing). Knowledge of local, regional and international laws is therefore critical before any collection activities can be conducted. Nonetheless, state institutions regulating funding continue to exert considerable influence on not only the type of research that should be done, sometimes based not on scientific but other criteria, including nationalism, professional jealousy and zealous protection of resources

considered 'theirs.' Denial of access to biological resources to people who understand them the most (i.e. the systematists and ecologists) also stems from the confusion of environmental conservation with animal welfare, in addition to emotions associated with the removal and euthanasia of wild species. Stuebing (1998) likened sampling of species to a biopsy: true it hurts. But knowledge thereby acquired has the potential to save ecosystems and populations, both surely desirable by society.

Centuries ago, our own species began one of the greatest scientific journeys ever conceived — the exploration of life on Earth (see Wheeler 1995). The benefits of these voyages to the then unknown ends of the earth to humans have been tangible, leading to the discovery of new continents, of new people, of new mineral and plant and animal produce, of medicines, fuel, timber, textiles and spices. Wild species and wilderness areas have also inspired songs, poetry, dances, stories, myths, handicrafts, cuisine, decorations, tattoos, rituals, to name but a few aspects of life. Nearly two million species of microbe, protist, plant and animal species have been described. But the task isn't done yet.

Wrote Thomas Malthus (1766-1834) of the need to have the government, and indeed everybody else, to leave science alone:

"If science be manifestly incomplete, and yet of the highest importance, it would surely be most unwise to restrain inquiry, conducted on just principles, even when the immediate practical utility of it was not visible. In mathematics, chemistry, and every branch of natural philosophy, how many are the inquiries necessary for their improvement and completion, which, taken separately, do not appear to lead to any specifically advantageous purpose; how many useful inventions, and how much valuable and improving knowledge would have been lost,

if a rational curiosity and a love of information had not generally been allowed to be a sufficient motive for the search after truth."

(extracted from Asma, 2001: 81)

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Appendix: Glossary of terms used in systematics, taxonomy, nomenclature and biogeography

affinity - relationship.

allopatric - pertaining to species or populations that occupy mutually exclusive geographic areas.

apomorphic - a relatively more derived state in an evolutionary sequence of homologous characters.

autapomorphy - pertaining to apomorphic characters found in only one or two sister groups.

binomen - scientific designation of a species, consisting of a generic and specific names.

biogeography - study of geographic distribution of organisms.

character - structure or behaviour of an organism that may provide evidence of relationship.

clade - species of a phyletic lineage derived from a single stem species.

cladistics/cladism - theory by which organisms are ordered and ranked exclusively on joint descent from a single ancestral species.

congeneric - pertaining to species belonging to the same genus.

conspecific - pertaining to populations of the same species.

derived character - character that differs from the ancestral condition.

Appendix: Glossary of terms used in systematics, taxonomy, nomenclature and biogeography (contd.)

diagnosis - formal statement of characters that distinguish a taxon from its close relatives.

disjunction - major geographical gap in distribution of a taxon.

emendation - an intentional modification of spelling of a taxon name.

endemic - restricted to a particular region.

holotype - a single specimen designated or indicated as the type by the original author at the time of first description of the taxon.

hypodigm - the entire material of a taxon available to a taxonomist.

identification - determination of the taxonomic identity of a biological specimen.

lectotype - one example from the original series of syntypes that was subsequently selected to serve as the type.

lineage - descendant taxa of a common ancestor through time.

monophyly (n)/*monophyletic* (adj).- taxonomic group whose members share the same ancestor.

monotypic - higher taxon consisting of a single lower taxon.

neotype - specimen selected as type subsequent to original description when the original types are destroyed or suppressed by the International Commission of Zoological Nomenclature.

nomenclature - a system of names, and also, all rules guiding the use of these names.

parapatry - non-overlapping geographical distribution of populations.

paraphyly (n) / *paraphyletic* (adj).- taxonomic group containing taxa which do not share a common ancestor.

paratype - specimen other than the holotype that was used by the original describer and was thus designated.

phylogeny - hypothesis of relationship of evolutionary relationships of organisms.

Pleistocene refugia - favourable (here, warm) areas where species survived periods of glaciation.

relict - localised remnant of a previously wider distribution pattern.

sympatry - co-occurrence of two or more populations within the same geographic area.

synapomorphic - pertaining to a uniquely derived apomorphic character found in two or more taxa under study.

synonym - a chronological list of scientific names, together with their authors and dates of publication, that are associated with a taxa.

syntype - two or more types indicated as being in the type series by the original author at the time of description.

systematics - "the science dealing with the diversity of organisms" (Mayr and Ashlock, 1991: 431).

taxonomy - the theory and practice of classifying organisms.

type - zoological/botanical object/specimen that serves as the basis for the name of a taxon.

type locality - locality at which the type series was collected.

vicariance - fragmentation of ancestral species through the formation of a physical or ecological barrier.

